a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JUNE, 1959

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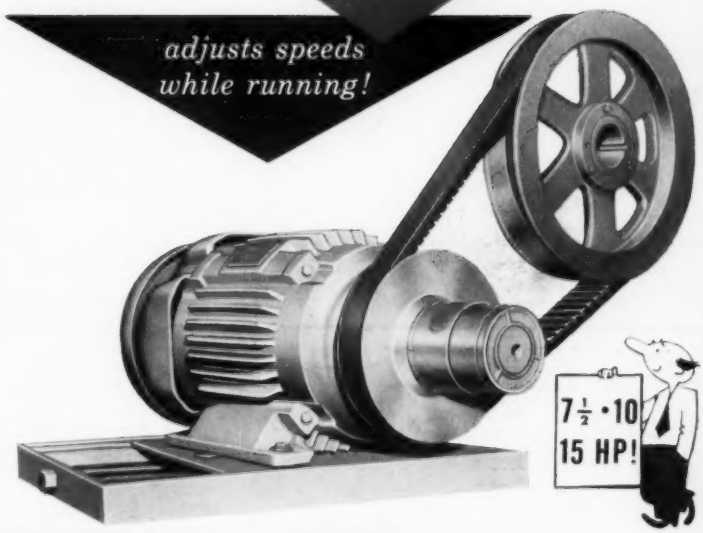
New Low Cost
TEXTILE
PULLEY

adjusts speeds while running!



REEVES *vari-spin drive*

● Speed settings in 2:1 range are accurately made in seconds—*while the frame is operating.*

A low cost unit, the compact 975-T features REEVES' exclusive "close grooving" for positive lubrication . . . free sliding shifting action.

Contact your nearest REEVES or RELIANCE representative, or write for complete details in Bulletin T37-G586-1.

for a wider speed range, 3 to 1, fixed center drive, write also for details on REEVES No. 16-10 Vari-Spin Drive . . . through 15 hp. Ask for Bulletin T37-G561-1.

Product of REEVES PULLEY COMPANY Division of

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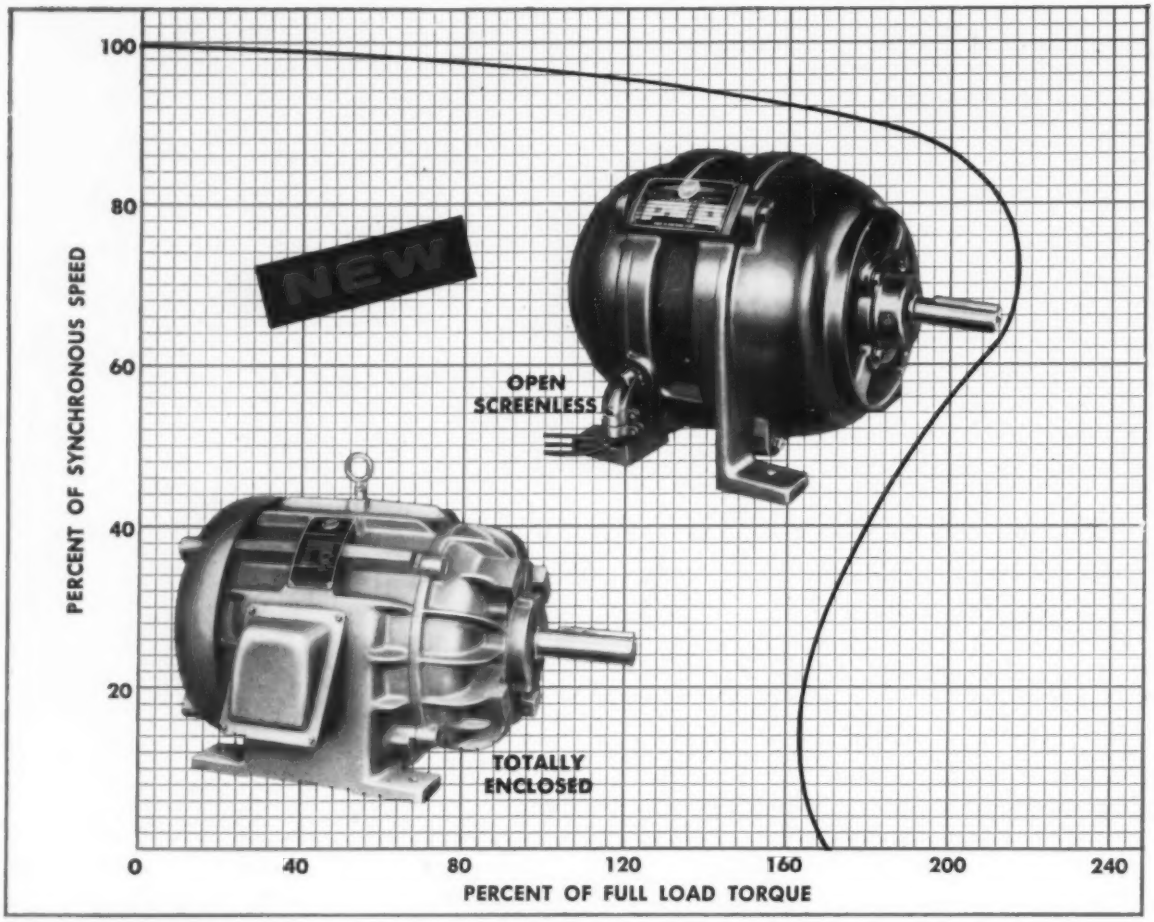

DIEHL* *"Smooth-Accel"* TEXTILE MOTORS

Designed specifically for roving, spinning, combing and similar applications requiring smooth, uniform acceleration

Available in Sizes From 1 to 20 HP

This new line of DIEHL "Smooth-Accel" Textile Motors meets the textile industry's requirements for motor drives with extra smooth and uniform acceleration characteristics, and incorporates design advancements which make this new line top-choice for the efficient operation of today's high speed textile machines.

Note These Important New Advantages

● **Smooth Acceleration:** Smooth, gradual rate of acceleration over the entire operating cycle features the new "Smooth-Accel" line . . . resulting in materially reduced "ends-down" time, and uniform quality of production. The typical curve above illustrates the excellent speed-torque characteristics from zero to full speed. Reconnection of leads for new frame break-in is unnecessary.

● **Reduced Power Costs:** DIEHL "Smooth-Accel" Motors have both high efficiency and power factor over the complete operating range . . . *keep power costs to a minimum.*

● **High Over-Load Factor:** Liberal electrical design and effective ventilation of DIEHL "Smooth-Accel" Motors substantially increase the overload factor, minimizing initial investment . . . *more horsepower at lower cost.*

● **Long Service Life:** "Smooth-Accel" motor windings feature high dielectric and mechanical strength, high thermal rating and special humidity-proof impregnation ... protection against wide voltage variations and the effects of continuous operation under adverse conditions.

● **Construction Features:** Streamlined, easy-to-clean enclosures—dynamically balanced rotors — over-size bearings — large 4-way terminal box (oil- and water-tight connector and vinyl-covered cable optional) — standard NEMA mounting dimensions for ready interchangeability — *minimum maintenance.*

. . . these advantages are yours at no increase over standard textile motor prices! Before selecting your next motor drive for replacements, modernization or new equipment, get the DIEHL story about the New "Smooth-Accel" line.

*Trademark of DIEHL MANUFACTURING COMPANY

Diehl*

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

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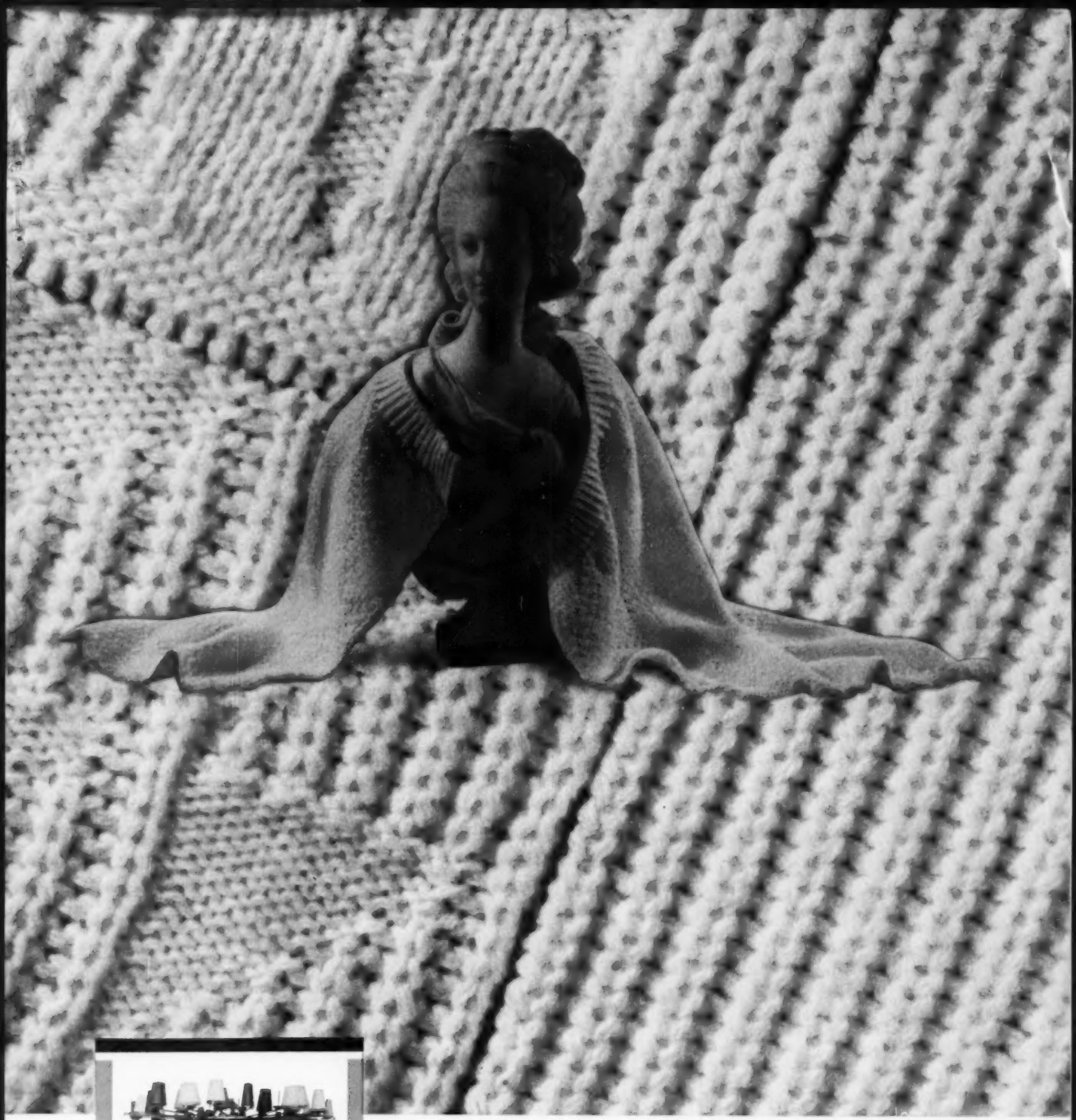
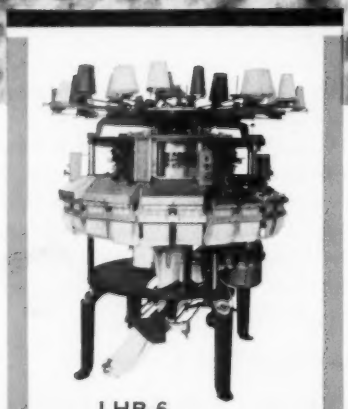




LHB-6

Traditional quality . . .

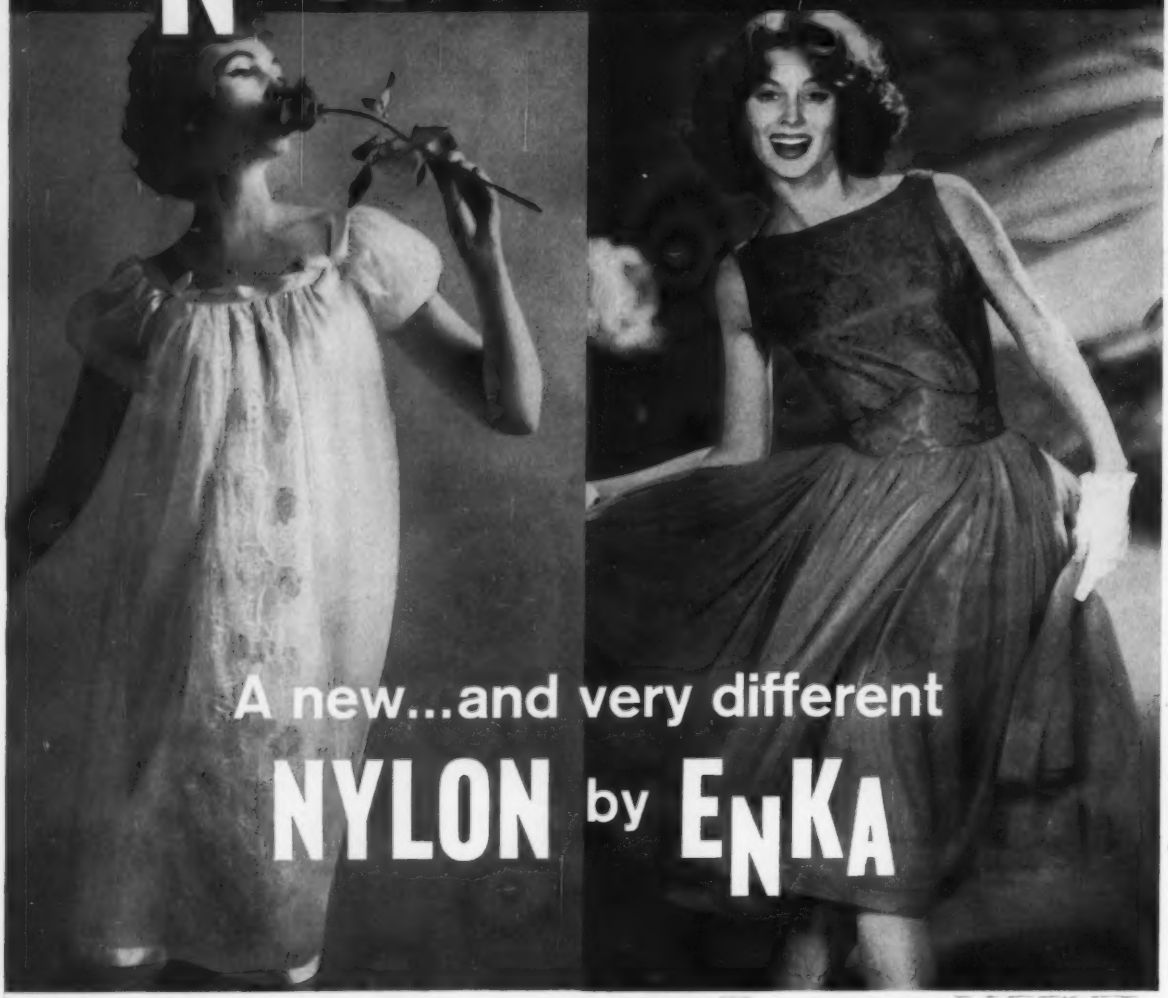
Now the LHB-6 offers quality "Bulky knits" in 3 or 4 cut 30″ diameter with all the versatile features of the LH-6. A machine designed especially for "bulky knit" fabrics with a wide range of pattern possibilities including half cardigan, links and links, jersey, reverse jersey or in a variety of combinations with panels, self designs, tuck effects and other fancy stitches all with various rib cuffs.

WILDMAN JACQUARD

WILDMAN JACQUARD CO. • 1210 Stanbridge Street • Norristown, Pennsylvania • Manufacturers of **HEMPHILL BANNER** Knitting Machines

A subsidiary of Draper Corporation, Hopedale, Mass.

ENKA PROMOTABLE YARNS MEAN BIGGER PROFITS FOR YOU!



LINGERIE BY SKYLON

FABRICS BY BANGOR MILLS

DANCE SKIRT BY NELLY DE GRAD

Tricot converters agree that no nylon takes dyes like Enka nylon...the softer, more lustrous nylon that has taken the market by storm.

Our new nylon has a special appeal for my fair lady because it was researched and developed with her in mind—for her lingerie; hosiery; tricot chiffon blouses, skirts and dresses; sweaters—for all the intimate and outerwear fashions to which Enka nylon brings lasting beauty and superior performance.

It is an unbelievably soft yarn created especially for the things that women wear. National advertising, merchandising and publicity are carrying this compelling sales story to stores and consumers across the country.

Bold fashion ads and hangtags, counter cards and wall and window posters echo this profit-packed selling theme: "A new and very different nylon by Enka...especially for you."

Mills, converters, cutters, knitters, and manufacturers interested in hearing about Enka's "New...and Very Different Nylon" promotion supported by national advertising, merchandising and publicity, contact:

Mr. Arthur B. Harris, Jr. at Oxford 7-6141, Ext. 26, or contact the Enka sales office nearest you.

American ENKA Corporation, 530 Fifth Avenue, New York 36, N. Y. • Chattanooga • Greensboro • Providence

Producers of Jetspun® solution-dyed rayon • Skyloft® lofted filament rayon • Filament and staple rayon • Filament and staple nylon

Textile Industries

Formerly "COTTON"

JUNE 1959 VOL. 123, NO. 6

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EDITORIAL AND EXECUTIVE OFFICES: 806 Peachtree St., N. E., Atlanta 8, Georgia—Phone: TRinity 4-4462

George H. Dockray, Editor

J. Frank Guest, *Managing Editor*

Milton C. May, *Associate Editor*, P. O. Box 11015, Charlotte 9, N. C.

Stanley M. Suchecki, *Associate Editor*, P. O. Box 446, New Canaan, Conn.

Jesse W. Ellington, *Associate Editor*

Dorothy D. Eudy, *Assistant Editor*

J. A. Moody, *Production Manager*

H. Redfern Hollins, *Director of Circulation*

John C. Cook, Vice-Pres. & Business Manager

Walter M. Mitchell, Jr., *Advertising Manager*

BUSINESS REPRESENTATIVES

BOSTON—Arthur C. Shaw, *27 Southgate Rd., Wellesley 81, Mass. (Phone: Cedar 5-3648).*

NEW YORK—William K. Hoffman, *58 Euclid Ave., Maplewood, N. J. (Phone: South Orange 2-2484).*

BUFFALO AREA—J. D. Parsons, *39 Atlantic Ave., Cohasset, Mass. (Phone: Evergreen 3-0712).*

PHILADELPHIA—James R. Corgee, *27 E. Windermere Terrace, Lansdowne, Pa. (Madison 6-9145).*

CHICAGO—Richard F. Hanrahan, *333 N. Michigan Ave., Chicago 1, Ill. (Phone: Central 6-6964).*

CLEVELAND—A. E. C. Smith, *R. F. D. 3, Eagle Rd., Willoughby, Ohio (Phone: Whitehall 6-1100).*

CHARLOTTE—W. Cliff Rutland, *Box 102, Gastonia, N. C. (Phone: University 7-7995).*

LOS ANGELES—Warren R. Christian, *4140 Edenhurst Ave., Los Angeles 39, Calif. (Hollywood 2-1133).*

SAN FRANCISCO—Fred Jameson, *821 Edinburgh St., San Mateo, Calif. (Diamond 3-8806).*

EUROPE—Jean Andre, *22 Rue Saint—Ferdinand, Paris 17, France.*

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Photo courtesy Burlington House Fabric Company, New York, N. Y.

Smart new way to cover a market

Fabrics with high fashion appeal have never been used for mattress coverings before–and with good reason. Attractive materials like rayon damask simply couldn't take the pull and strain of a tufted mattress.

Now, thanks to PLIOLITE LATEX, a smart-looking line of rayon damask mattress coverings has been created that not only calls for customer attention–*but lasts longer, too.* That's because a coating, based on PLIOLITE LATEX, provides the necessary adhesion to hold warp and filling threads in place–gives the fabric better body, improves seam strength. And because this latex is easy to process–with excellent mechanical stability–the production operation is efficient and economical.

Want more information? Simply write for details on PLIOLITE LATEX – including latest *Tech Book Bulletins* – to

Goodyear, Chemical Division,
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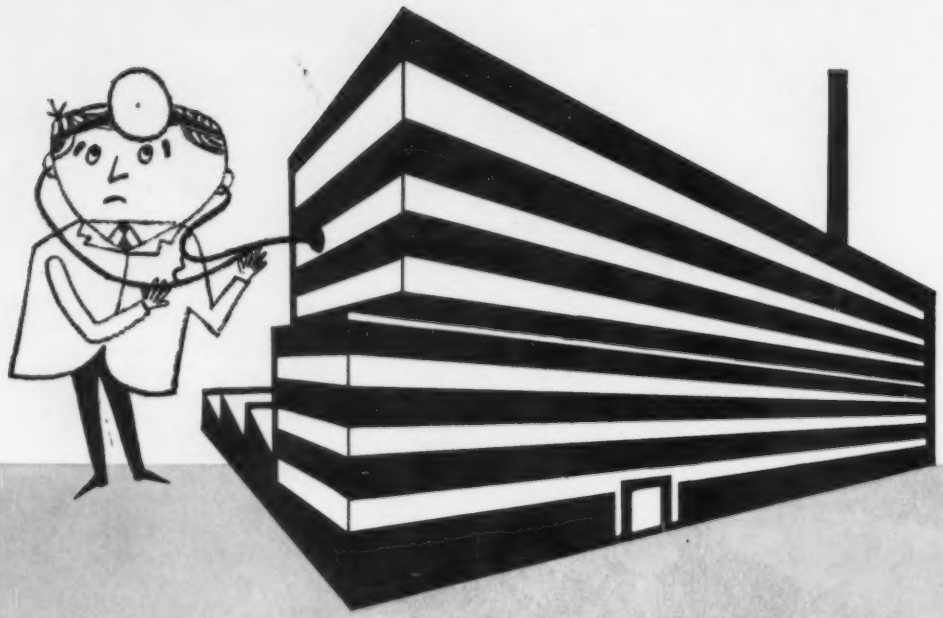
GOODYEAR
CHEMICAL DIVISION

Pliolite–T. M. The Goodyear Tire & Rubber Company, Akron, Ohio



CAN WE HELP YOU WITH YOUR PROBLEMS?

When a plant finds itself in the midst of a first-class technical problem (and every plant does!), superintendents and foremen have long since discovered that enlisting the aid of a qualified "doctor" often speeds an effective "cure" . . .

For more than a half-century, textile plants everywhere have relied upon the problem-solving combination of Scholler Men and Materials—a service that is always extended willingly, speedily and without obligation.

Scholler technical men and qualified engineers, backed by one of the finest textile research and problem-solving laboratories, offer you a helping hand based upon a wide and varied experience—a know-how acquired through years of dealing with knotty technical problems, everywhere.

Call upon these able men for a helping hand when your next in-plant problem rears its ugly head! Write, wire or phone . . .

SCHOLLER BROTHERS, INC.

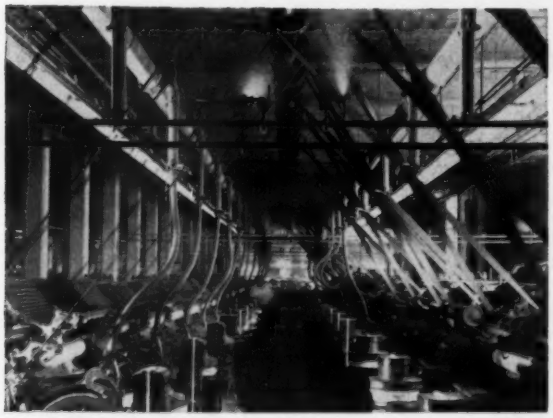
PIONEERS IN THE BETTER FINISHES THAT MAKE THE BETTER FABRICS

SINCE 1907

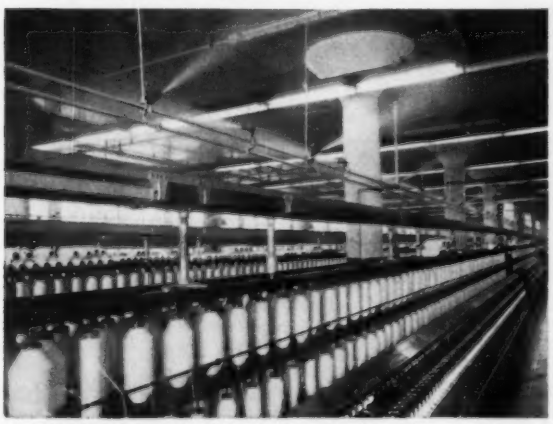
Collins & Westmoreland Sts., Philadelphia 34, Penna. IN CANADA: SCHOLLER BROTHERS, LTD., St. Catharines, Ontario.

WILLIMANTIC, CONN. — Humidification with cooling was the choice in this mill.

DALTON, GA. — Amco Humidification with cooling was preferred for spinning operation at Dalton, too.



NEWNAN, GA. — Amco Humidification alone was selected for carding room at Newnan.



CLOVER, S. C. — Humidification alone is also used in the spinning room here.

Cleveland-Rowan Plant of American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

a leading All-American team...

AMERICAN MOISTENING COMPANY
and
AMERICAN THREAD COMPANY

A 65-year old association which has resulted in great gains in product quality and productivity

Correct yarn regain through maintenance of normal moisture content is only one of the benefits which American Thread has enjoyed as a result of the use of Amco humidification. Among the others are yarn numbers kept more even; increased output due to closer machine tolerances and less static electricity; improved product quality because of fewer thread imperfections, reduced dust and fly, more operator comfort.

Amco, of course, designs *all* types of systems — straight humidification; humidification in combination with ductless evaporative cooling, as used by American Thread; dry duct systems; and central station air conditioning.

For expert advice, backed by many years of textile air conditioning experience, call on Amco. An Amco engineer will be glad to suggest a solution to any air conditioning problem you may have. There is absolutely no obligation.

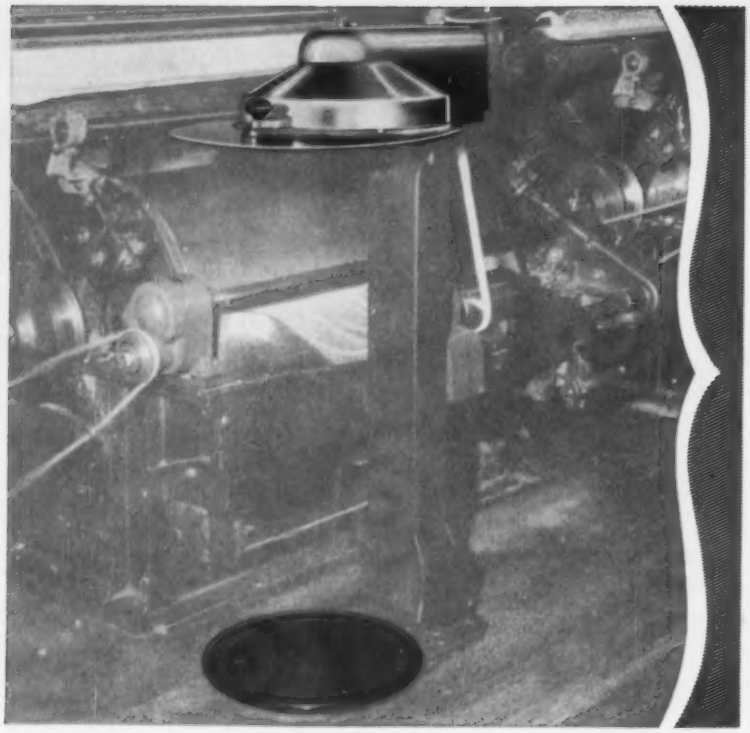
AMCO

SINCE 1888

AIR CONDITIONING EQUIPMENT

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA

BRANCHES: ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, CANADA



SOUTHERN STATES' NEW COILER HEAD AND BASE MAKE CONVERSION TO LARGER CANS SELF-PAYING

For mills seeking a low initial cost for conversion to larger cans, Southern States' new conversion unit is the answer. It consists of: 1) the identical, vastly improved ball bearing head used on the new complete coiler; 2) an adapter spacer and upright shaft for increased coiler height necessary to accommodate 36″ or 42″ cans; and 3) a new, standard-type base assembly with a conventional gear system for driving the can table. All necessary components are furnished in kit form for quick installation, *using your existing stands.*

Southern States' Conversion Units are designed for use on any make cotton card and for accommodating cans of larger diameter.

Case histories of mills prove conclusively that Southern States' conversions are so economical they soon pay for themselves. For a small initial investment, you enjoy all the advantages of more efficient handling; lower operating costs; improved quality; simplified oiling; ease of maintenance; smaller parts inventory; and years of satisfactory service.

Get full facts from your Southern States representative or write direct to us for Technical Bulletin No. 205.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

SHORTS & REMNANTS

► June means "Here Comes the Bride," and that's also sweet music for Textiles, U.S.A. As TI's current ad in *Industrial Marketing* says, "Millions of yards of organdy, tulle, net, and satin; linen showers by the hundreds of thousands—and male fabric finery, too. But that is only the

beginning. Each year as more than 1,500,000 weddings take place in America, as many new families are established. Textiles are keyed to population and family increase. Supplying clothing, household, and industrial needs in an expanding economy makes textiles a great 'growth' industry."

► Rich's of Atlanta advertises "pure silk summer linens." That must be one of the new synthetics that we hadn't heard about.

Likes Ringgold

" . . . Congratulations for having the courage to print an article that calls the shots as this one does ["War on Unions?" by Ringgold Arden, TI for April, 1959, p. 156].

"Are copies of this article available? If they are, I would like to get a few copies to spread around where I think they would do some good. As a matter of fact I wish I could afford to send one to every home in the United States. . . "

R. W. MacArthur
Pres., Ramsey Products Corp.
Albany, N. Y.

Too Many Bills

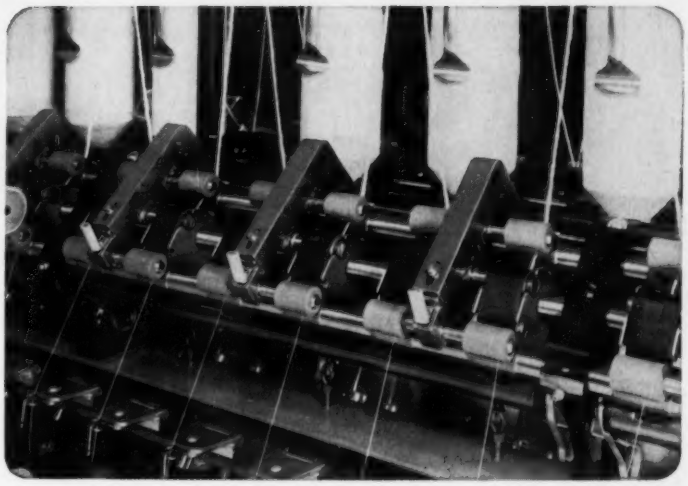
Sam Goldwyn is reported to have complained once that every Tom, Dick, and Harry is named Bill. Now

(Continued on page 10)

THE MOST SENSIBLE ANSWER TO GADGET-FREE TOP ROLL SUSPENSION

ROBERTS *PosiWate* SUSPENSION SYSTEM

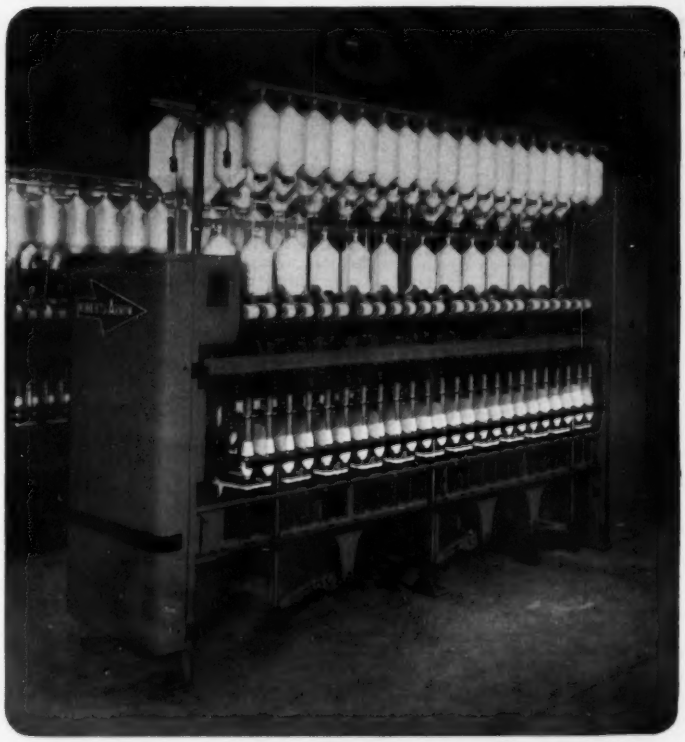
Elegantly simple, the Roberts PosiWate Top Roll Suspension System is completely free of hooks, unpredictable short springs and other gadgets. PosiWate recovers the best features of positive weighting and weight distribution used and proven in several million spindles insuring uniform performance from spindle to spindle.



A FEATURE OF

ROBERTS ARROW

ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

- PosiWate Top Roll Suspension
- UnaRing Balloon Control
- EvenGrip Fluted Bottom Rolls
- Roberts Supreme Ball Bearing Spindles
- Double-Apron High Draft System
- UnitVac Power-Suction Cleaning
- Roberts All-Ball-Bearing Head
- Unitized Sectional Frame
- AeroCreel with Latch-Type Bobbin Holders
- Flexibility For Cotton And Synthetics

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

Wait a minute!

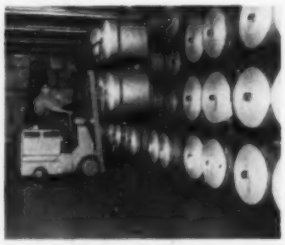
adding to your warehouse?

Has it ever occurred to you that you may have sufficient space—if you can put it to proper use?

Let **PALTIER** trained Materials Handling Engineers take a look. With properly selected equipment and flow of materials your present storage may be adequate! **Storage equipment COSTS LESS than NEW FLOOR SPACE!**

PALTIER STORAGE SYSTEMS are designed jointly by industrial architects, structural and materials handling engineers.

Flexible Paltier



Steel Paltier

Paltier Pyramid Rack

Paltier Adjustable Pallet Rack

Also Specially Designed Racks for Specific Problems.

Write today to . . .

THE PALTIER CORPORATION

Designers, Engineers and Manufacturers of Engineered Storage Systems

1727 Kentucky Street • Michigan City, Indiana

DISTRIBUTORS IN PRINCIPAL CITIES

SHORTS & REMNANTS

(from page 8)

S & R has received a complaint that much confusion is being caused by the fact that there are *two* Bill Wallaces calling on the mills in the Greenville area.

W. A. Wallace is a manufacturers' agent for McDonough Power Equipment and Livingston & Haven; **W. H. Wallace** works for Louis P. Batson. We admit that this is a little confusing.

W. A. Wallace was by the office the other day, and we suggested that he change his name to Bull Willis. But he didn't like the idea. We were just trying to be helpful.

Wants Sweat-Shirt Material

"We are interested in the manufacture of sweat shirts for boys. We would like to have the addresses of factories that manufacture material that would be suitable for this line."

MEL OBERDICK
Dir., Mavericks, Inc.
Cheyenne, Wyo.

►"TI Gives $2½ Million for Earth Sciences Center" says the headline. But while we modestly admit to having a heart at least as big as a Virginia ham, it's not *this* TI, it's that Texas Instruments again. Seems that **Cecil H. Green,** vice-president of TI (the Texas one, that is) gave $2,527,500 to his alma mater, M.I.T., to construct the center. That other TI must be a right smart outfit, since the gift was in the form of 30,000 shares of TI stock.

► Another headline says, "Africa Faces Hippopotamus Shortage." So if you've always wanted a hippopotamus, but for one reason or another have put off getting one, you'd better hurry.

► And still another headline, this time in a fashion magazine, says, "Swimwear for Season to Be Tops." It certainly should attract attention.

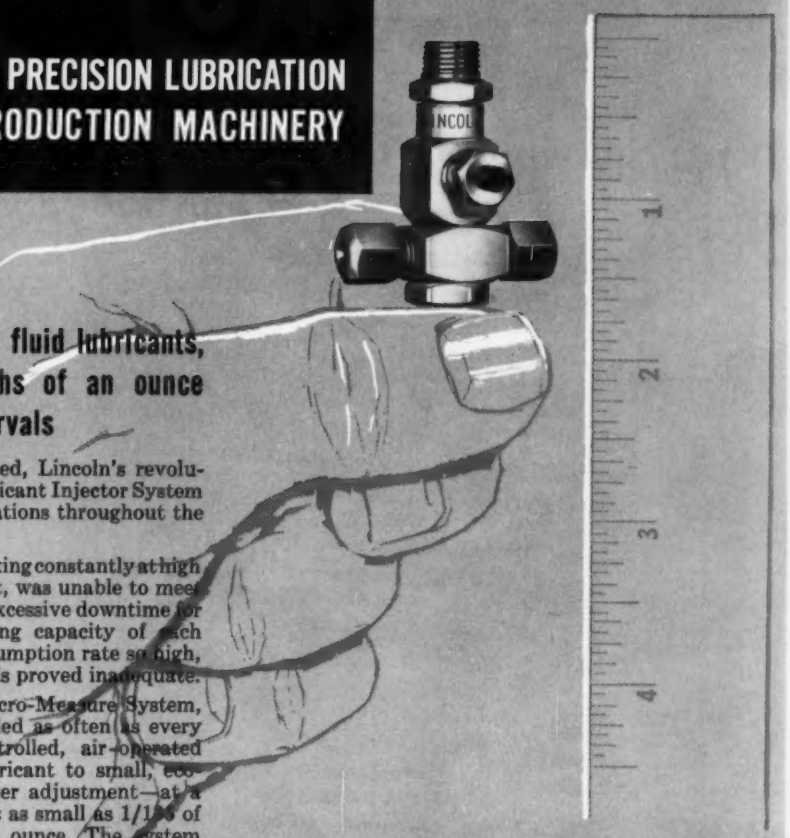
Wash-and-Wear

S & R was surprised to learn on a recent trip to Mexico that wash-and-wear has made practically no penetration South of the Border; however, it should be a big thing in the not-too-distant future. But North of the Border, wash-and-wear continues to be the biggest thing since mah-jongg (and whatever became of the Pyramid Clubs?). Requests for reprints of TI's round-up on wash-

(Continued on page 22)

New! Lincoln Micro-Measure System

FOR AUTOMATIC PRECISION LUBRICATION OF TEXTILE PRODUCTION MACHINERY



Pre-measures and injects fluid lubricants, automatically, to millionths of an ounce at rigidly-controlled intervals

Built to satisfy a specific need, Lincoln's revolutionary new Micro-Measure Lubricant Injector System is finding a wide range of applications throughout the textile industry.

A newly-installed twister, working constantly at high speeds in a southern textile plant, was unable to meet production requirements due to excessive downtime for lubrication. The lubricant-holding capacity of each bearing was so minute, and consumption rate so high, that ordinary lubrication methods proved inadequate.

Lincoln's answer was the Micro-Measure System, which can be automatically cycled as often as every minute. An automatically controlled, air-operated pump supplies refinery-pure lubricant to small, economical injectors with micrometer adjustment—at a predetermined rate, in quantities as small as 1/1[illegible] of a drop or 200 millionths of an ounce. The system maintains a constant, uniform oil film on all bearing surfaces with no overflow, no dripping.

With Lincoln's Micro-Measure System, the manufacturer improved his production rate and quality of product *with substantially lower operating expense*—dollar savings that completely offset the cost of the Micro-Measure System within a few weeks!

For further information on Micro-Measure and how it can help *your* mill's operation, mail the coupon today, or contact your local Lincoln distributor.

MAIL THIS COUPON TODAY!

LINCOLN ENGINEERING COMPANY
5702-15 Natural Bridge Avenue
St. Louis 20, Missouri

Please send my copy of MICRO-MEASURE SYSTEM Bulletin 816.

Name..... *Title*.....

Company.....

Address.....

City..... *Zone*..... *State*.....

Lincoln

LINCOLN ENGINEERING COMPANY
Division of The McNeil Machine & Engineering Co.

Coast-to-Coast Sales and Service Through 16 Branch Offices and Leading Industrial Distributors

News about LUREX®

Perfect running mate for wool and they finish together

Two types of Lurex yarn are prescribed for use with wool.

Lurex MM (metallized polyester yarn), covered by Patent #2714569.
Lurex MF (polyester foil).

Both yarns show superior form in the finishing process so important in wool constructions, matching the wool fibers themselves in the excellence of their performance. In addition:

- Lurex adds dimension and luxury to wool fabrics. Lurex is the *soft, supple* metallic yarn fully compatible with the fine hand characteristic of wool.
- It opens up entirely new color concepts, through an ever-broadening range of colors and multi-colors.
- Lurex can be successfully extracted during the reclaiming operation, thanks to a recently developed method of handling. Ask your Lurex salesman for the full story on this.
- Lurex is non-tarnishing, can be safely subjected to dry-cleaning processes commonly used on wools.

See chart opposite, detailing the step-by-step procedure for wool and Lurex fabrics. For new styling and design ideas, get in touch with us direct.

Lurex, non-tarnishing metallic yarn made only by the Textile Fibers Department of

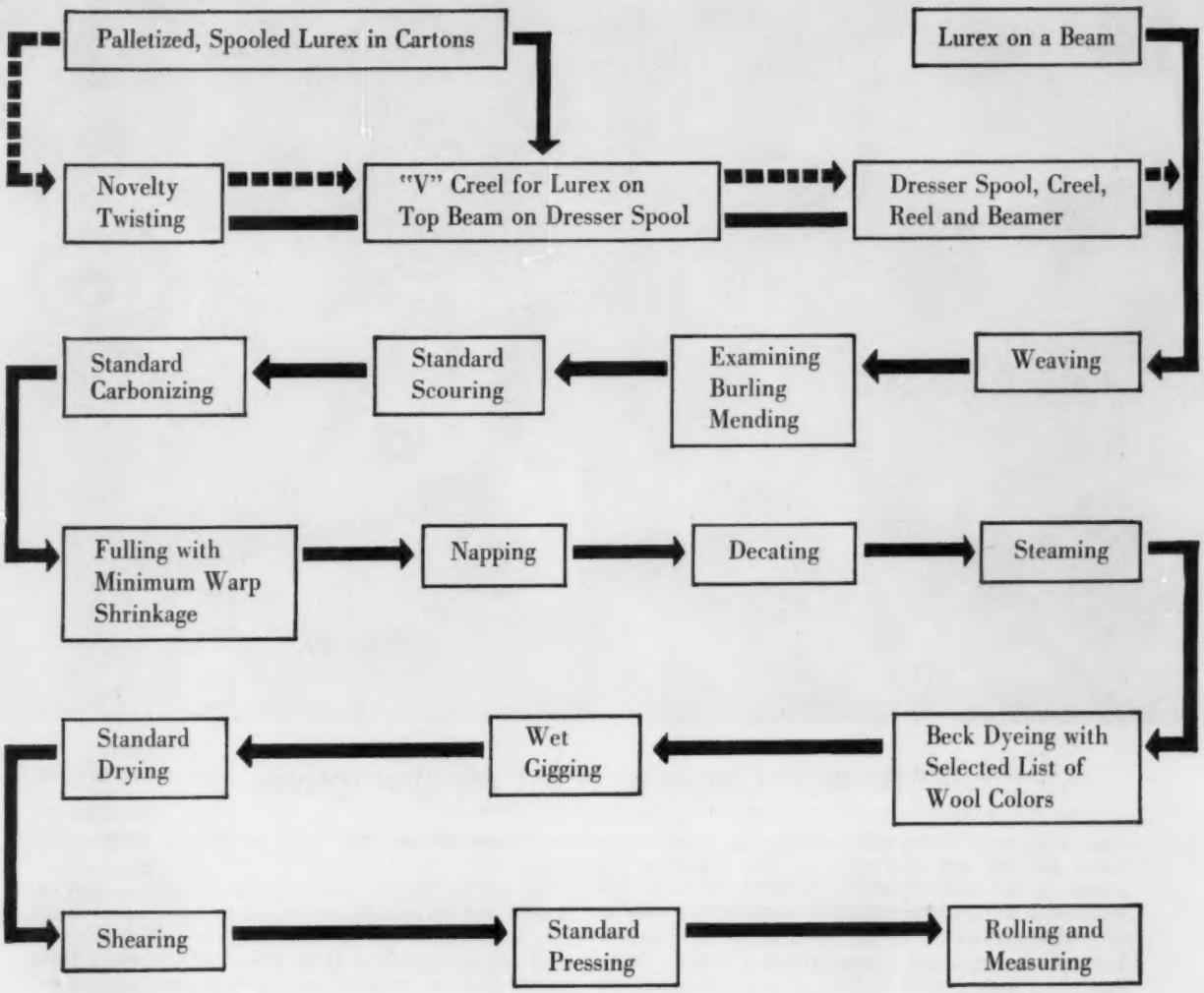
DOW

The Dow Chemical Company • ***Williamsburg, Virginia*** • ***New York: 350 Fifth Avenue***

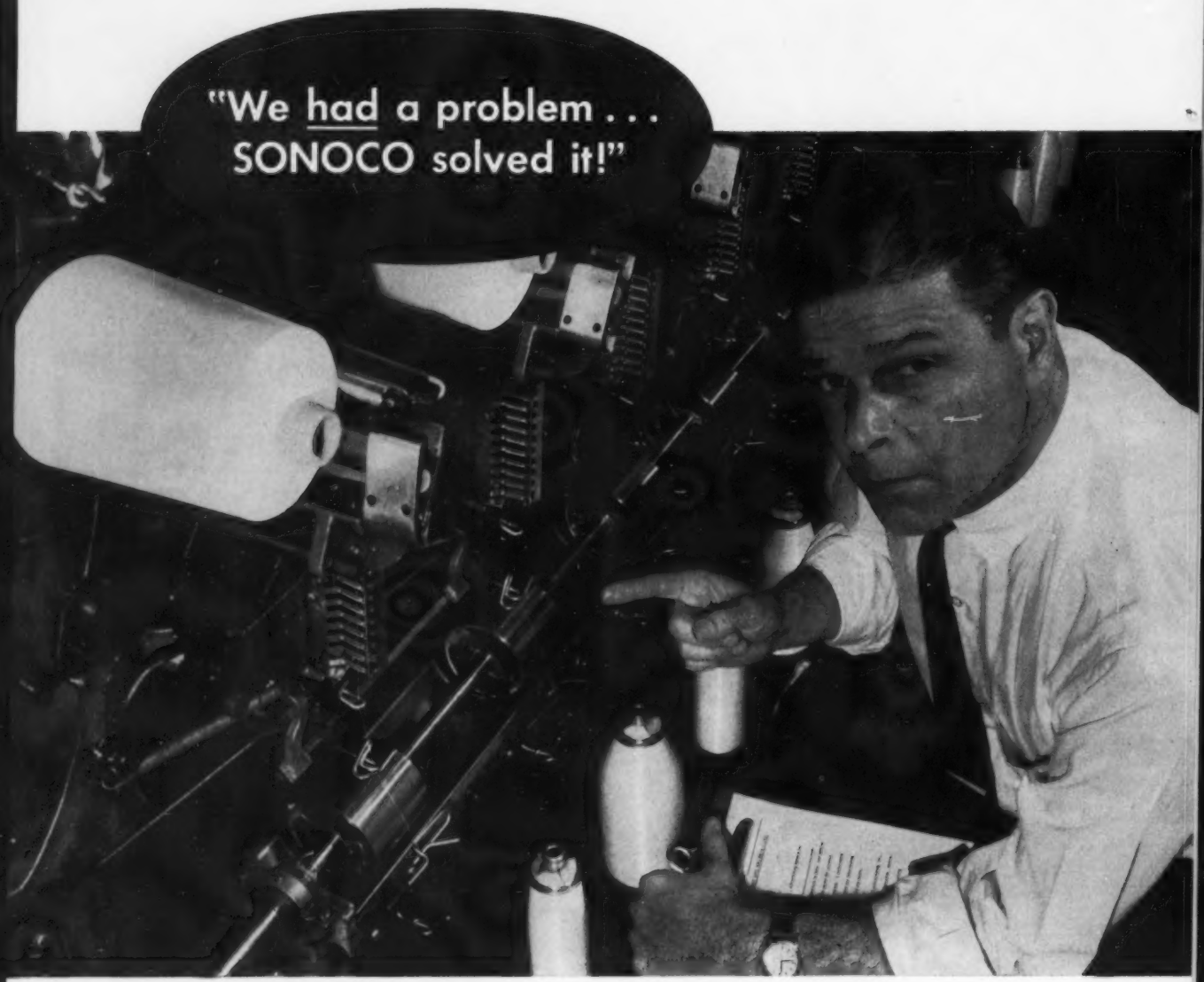
Boston • Camden, N. J. • Charlotte, N. C. • San Francisco

Manufacturing Affiliates in Canada: William B. Stewart & Sons, Ltd., Toronto and Montreal

Typical flow chart for woolen mills using LUREX MM LUREX MF



Finishing Routing Symbolized For a Piece Dyed Broadcloth With Certain Minor Operations Omitted



THE NEED: Cones to resist oil absorption

Yarn lying next to the cone surface was found to be brittle and stiff and hard to work. This condition was caused by the cone absorbing oil from the yarn. The solution to the problem required cones with a suitable oil barrier surface.

Through research and experimentation Sonoco found that cones with special Unitex surfaces eliminated the oil absorption. An oil extraction, from yarn aged on cones of this type, showed no deficiency of oil in the yarn lying next to the cone surface — and at 1000 yards per minute, the yarn showed no tendency to slough off.

Only Sonoco with 60 years' experience, plus modern research and completely integrated manufacturing facilities, could solve this problem quickly with economical and efficient carriers. It is typical of countless cases where Sonoco technical and production "know-how" has benefited the industry. You can continue to depend on Sonoco!

sonoco

Our 60th year
1899 - 1959

SONOCO
Products for Textiles
SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

Here's real money-value in a liquid detergent!

Nacconol® SL

ALKYL ARYL SULFONATE

OTHER TEXTILE NACCONOLS

NACCONOL NR
Flake

NACCONOL DB
Dense Beads

NACCONOL DBX
Super Dense Beads

All Minimum 40% Active Organic Content!

You get a double bonus when you specify this efficient anionic.

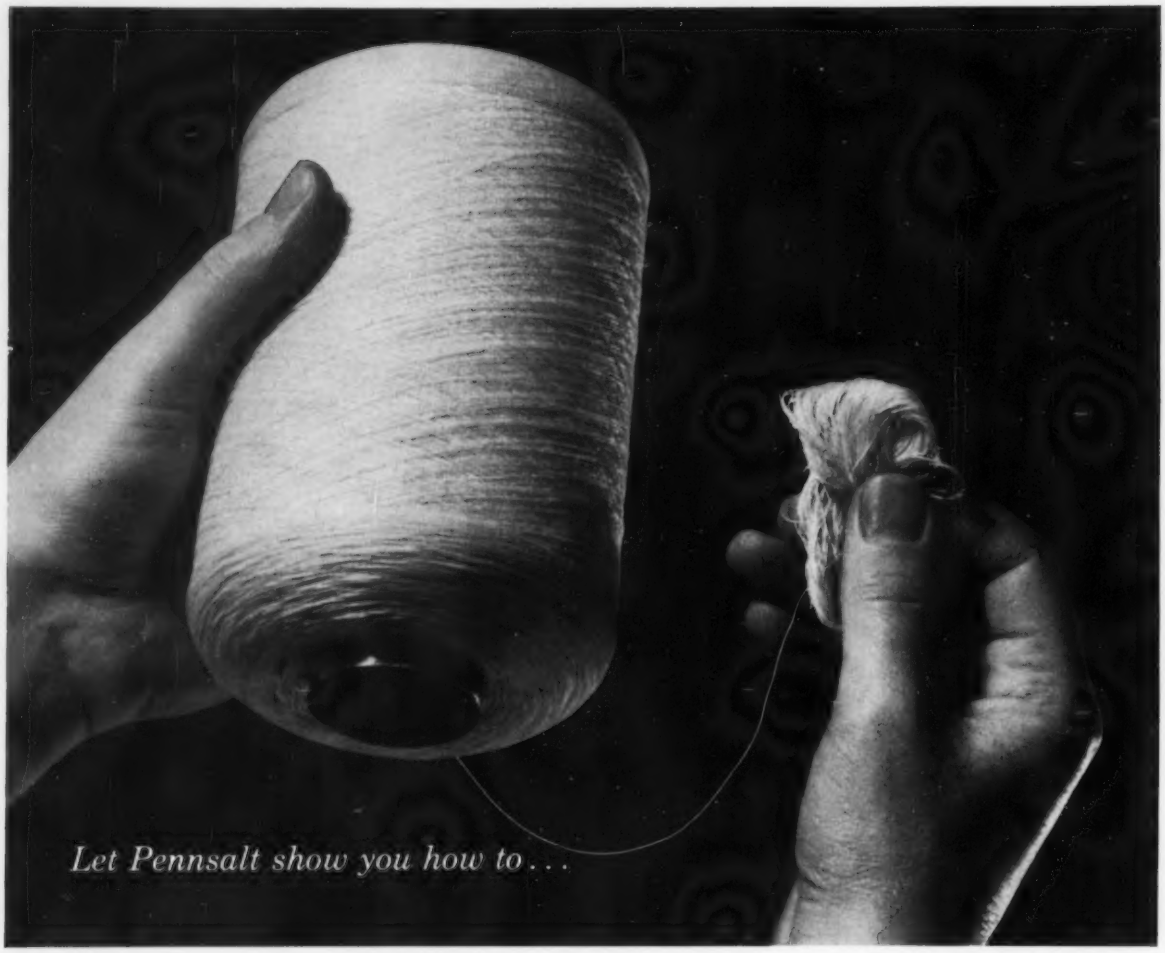
First, NACCONOL SL gives you more cleaning power per dollar on an active ingredient basis than most dry products.

Second, waste is minimized and processing time reduced. NACCONOL SL is clean and easy to handle. The pale yellow liquid is clear and free-flowing even below 32°F. No dissolving is needed . . . you simply add tap water for the required concentration.

A practical mill trial with NACCONOL SL will quickly convince you of its economy.

NATIONAL ANILINE DIVISION
40 RECTOR STREET, NEW YORK 6, N. Y.
Atlanta Boston Charlotte Chicago Greensboro Los Angeles
Philadelphia Portland, Ore. Providence San Francisco
In Canada: ALLIED CHEMICAL CANADA, LTD., 100 North Queen St., Toronto 14

Allied Chemical



REDUCE COSTS and IMPROVE QUALITY

in your textile finishing operations

Personalized technical service tailored to your needs . . . plus quality chemicals . . . can mean substantial savings in processing and improved quality in your finished goods. Call on PENNSALT for TEXTILE FINISHING SERVICE if you:

- require softer yarn in package or warp bleaching
- have trouble neutralizing alkali in scoured or bleached goods
- have a silicate problem in cold or steam bleaching

An experienced representative will study your process from greige goods to finished product and provide you with reliable solutions to these and other textile finishing problems.

insist on PENNSALT QUALITY CHEMICALS when you buy

caustic soda hydrogen peroxide
chlorine ammonium chloride
surfactants ferric chloride

See Our Catalog in Chemical Materials Catalog

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Pennsalt Chemicals
ESTABLISHED 1850

Carbic Color & Chemical Company, Inc.
will be, from July 1, 1959, CARBIC-HOECHST Corporation
—a name which better reflects our association
with Farbwerke Hoechst AG., West Germany
and Hoechst Chemical Corporation, USA.
CARBIC-HOECHST is your leading source
for the highest quality dyestuffs and pigments.

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451 WASHINGTON STREET, NEW YORK 13, N. Y. Tel. WAlker 5-4464

Bahnson AIR-O-MATION FOR 1959

AIR AT WORK FOR INCREASED PROFITS

CONDITIONS • CLEANS • COLLECTS • CONVEYS

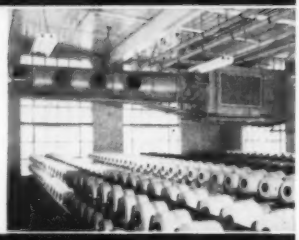
AIR CONDITIONING

CENTRAL STATION SYSTEMS

Custom designed and built to your individual plant requirements with cooling by evaporation or refrigeration and complete with Bahnson engineered and manufactured components such as Type Y Air Washer, controls, grilles, dampers, automatic suction strainers and lint filters. Bulletin 22A has full information.

HUMIDUCT UNIT SYSTEMS

Flexible unit system of Bahnson design. Provides all or any combination of textile air conditioning functions including cooling by evaporation or with refrigeration. Humiducts are self-contained and light enough in weight to be ceiling suspended, eliminating costly apparatus rooms and structural changes. Bulletin 4A contains complete details.



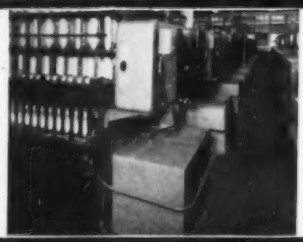
VACUUM COLLECTION

COLLECTO-VAC

Automatically collects broken ends, lint, fly on spinning frames. More uniform suction pressure the length of frame at lower horsepower. Anodized aluminum flutes do not warp or crack. Scroll type fan discharge disperses motor alley heat. Bulletin 30A has details.

Central Heat Removal System

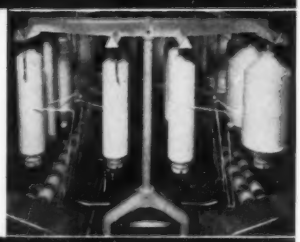
Takes out heat from collection units, motor alley, lowers room heat load. Can be added to existing collection systems.



CREELS

OPEN AIRE CREEL

Open creel design, enamel finished with specially constructed, factory assembled steel supports and crossarms. Crossarms are notched for greater lateral strength. Bahnson-designed weight wire positioners keep weights in correct operating position at all times. Open Aire Creel furnished also with new spinning machinery purchases upon request.



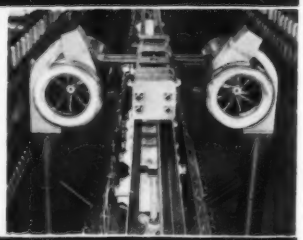
CLEANING

AERO-SWEEP CLEANER

Automatic oscillating traveling cleaner self-propelled along single ceiling suspended track. Cleaner blows perpendicular to track delivering head-on air blasts for more effective overhead cleaning of ceiling, beams, lights and piping. Has patented index feature for cleaning predetermined pattern. Write for Bulletin 21A.

CROSS JET CLEANER

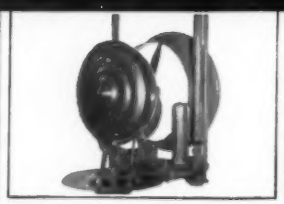
New cleaning principle with fixed and oscillating air discharge nozzles. The Cross Jet is self-propelled and operates on single rail creel-mounted track. Cleans entire frame, as well as walls, ceilings, beams, lights, etc.



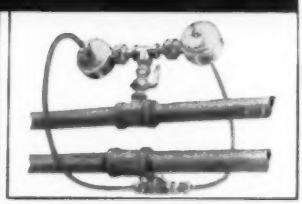
HUMIDIFICATION

Bahnson makes the world's most complete line of industrial humidification equipment. A type for every need is available of which only three models are shown. Whether for small rooms, large areas, or for supplementary evaporation, Bahnson designs and manufactures the best and most economical system to solve your humidification problem. Catalog Section 104 details complete line.

TYPE E



TYPE H



TYPE ESC ATOMIZERS

FOR DYERS AND FINISHERS

Bahnson can supply complete ventilation, exhaust and vapor absorption systems designed to fit specific requirements for Dyeing and Finishing operations.

91 of the top 100

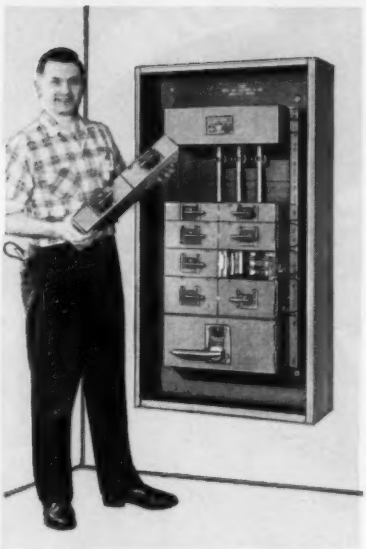
textile manufacturing firms in the nation are users of Bahnson equipment!

Bahnson COMPANY
WINSTON-SALEM, N. C., U. S. A.

EXACTLY THE PANELBOARD YOU WANT

Right Off Your Square D Distributor's Shelf!

In our contracting business, we find QMB PANELBOARDS are just the thing for heavy industrial jobs. The switches are heavy-duty horsepower rated and they plug in just like plug-in duct units or drawout air circuit breakers. The switch unit I'm holding is a twin 60 ampere 3-pole unit, rated 600 volts. We picked up the entire panelboard this morning from our local Square D distributor's stock to use on a 480 volt job. *We'll have it installed and wired by tomorrow afternoon—and no overtime.*



Notice that this 240 volt switch is much smaller than the 600 volt unit. That means we can put more circuits in the same size panelboard. Since Square D started making these new smaller units, we've been using QMB on all our commercial jobs. The interiors and boxes are the same for both 240 and 600 volt panelboards. That means one stock can work for both. *We can get the complete panelboard from our local Square D distributor the same day the job develops.*

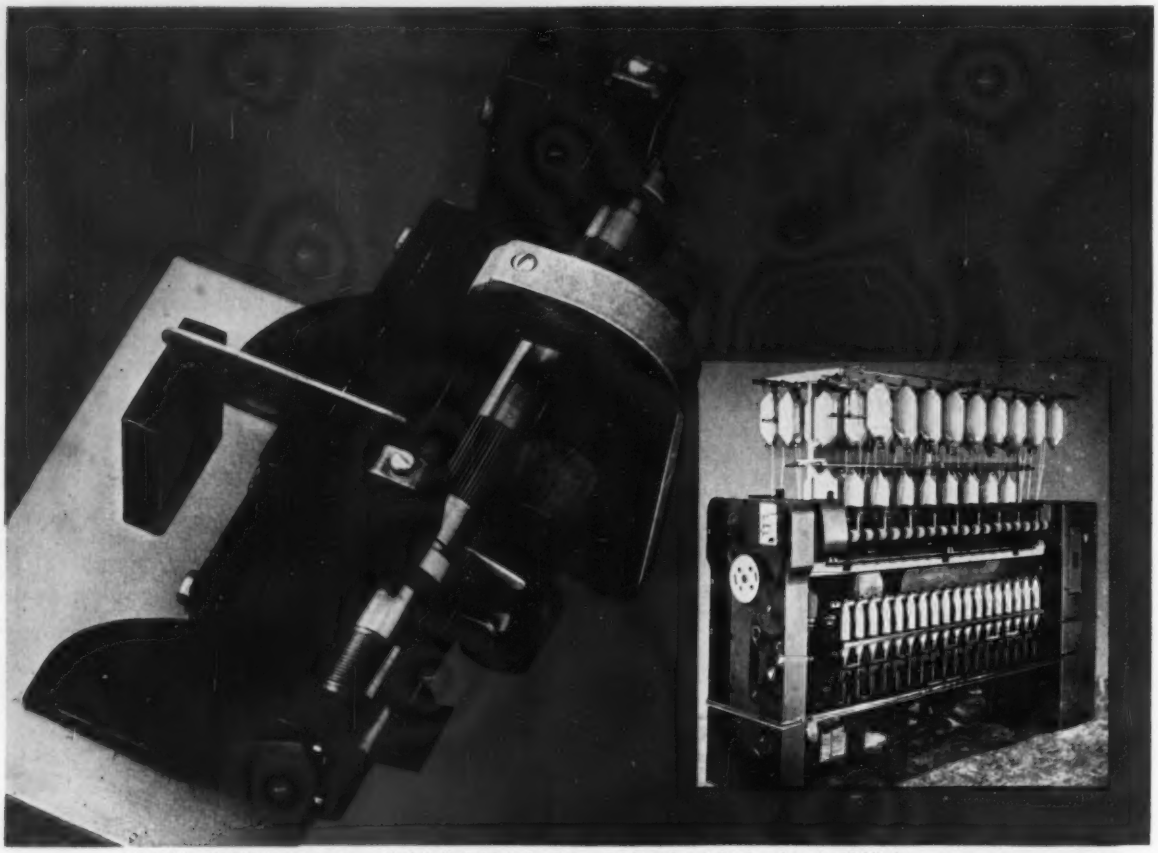
We don't gang separate safety switches and motor starters over a trough any more. The new QMB MOTOR STARTER PANELBOARD makes a much cleaner job. It's easier to install, it costs no more, and it's in our distributor's stock. In our business, we're concerned with overall installed costs. We find the installed cost of the QMB STARTER PANELBOARD is no greater than that of separate components. The interlock between the switch and starter doors makes a much safer installation, too.

• Plug-in construction combined with heavy-duty industrial design has made the QMB PANELBOARD a tremendous success. In fact, the flexibility of this unit plus availability from distributor stocks, has made it the leading power panelboard on the market. It's available either in 600 volt or 240 volt construction. Motor control units are available for use with either voltage switch units. When switch units exceed 200 amperes, the panelboards can be obtained from the nearest Square D Assembly Plant, completely factory-assembled. It's the modern fusible standard.

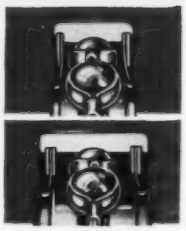
For additional information
write Square D Company, 6060 Rivard Street, Detroit 11, Michigan

EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT...NOW A PART OF THE SQUARE D LINE

SQUARE D COMPANY



Straight-line drafting assembly on new Nyaf Vertical Y Spinning Frame, Fafnir-equipped. Bearing close-ups (right) show contact-type Plya-Seals such as used (top) in Fafnir extra light ball bearings and (below) in the Fafnir extra-small type.



F. A. Young designs *"tomorrow's frame today"* for low cost spinning... with Fafnir Plya-Seal Ball Bearings

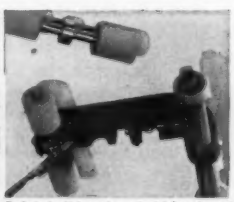
"Tomorrow's frame today" is the way F. A. Young Machine Company describes the new, straight-line Nyaf Vertical Y High Draft Spinning Frame. And at important turning points in this fully anti-friction machine, Young uses Fafnir Plya-Seal Ball Bearings.

Already proven on the popular Nyaf 39 frame (and in thousands of other textile applications), Fafnir's prelubricated Plya-Seal ball bearings need no relubrication. Flexible seals maintain constant, firm contact with the bearing inner ring regardless of wear or contraction of the seal... provide positive protection against contaminants and loss of lubricant. Precision spinning is also insured. Bottom roll bearings hold runout on front, middle and back rolls to .002 maximum. Top roll bearings runout .0005 maximum.

Fafnir's long experience with textile machinery bearing applications can prove invaluable when design reaches turning points. Take advantage of it when you have bearing problems. Write The Fafnir Bearing Company, New Britain, Connecticut.

Close-up shows vertical drafting feature of Vertical Y

Fafnir-mounted cradle designed for positive control high draft



Fafnir ball bearings hold front and back roll runout to .002 max.

Partners in Progress—
F. A. Young and Fafnir

FAFNIR
BALL BEARINGS

High Purity
Uniform Purity
Dependable Deliveries
Helpful Technical Service...
have made STAUFFER'S reputation
in the Textile Industry

STAUFFER'S CARBON DISULFIDE

exceeds 99.99% purity. Stauffer was the first—is still the largest—domestic producer of this essential chemical.

STAUFFER'S SODIUM SULFHYDRATE

(Sodium Hydrosulfide) is shipped in lined cars in aqueous solution of highest purity, 45% NaHS, suspended iron under 5 ppm. Cost is less per unit of 100%-active NaHS. The liquid is much easier to handle than the flake and pH is more accurately controlled. Send for new Technical Bulletin.

STAUFFER'S CAUSTIC SODA

is available in 50% and 73% liquid Rayon grade. New brochure, 30 pages with many graphs and tables will be sent on request.

STAUFFER'S SULFURIC ACID

is tailor-made for your process—**to a tenth of one percent**—in strengths from 77.67% to 100%; also as Oleum of 15% free SO_3 to 100% liquid SO_3. Shipments from many points in the South, Midwest and West.

Ask for Technical Service if we can be of help to you. Stauffer's technical experts are skilled and experienced in every aspect of making and using these textile chemicals.

STAUFFER CHEMICAL COMPANY

380 Madison Avenue, New York 17, New York

Prudential Plaza, Chicago 1, Illinois
824 Wilshire Boulevard, Los Angeles 17, California
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2350 Palmour Drive, N. E.,
Atlanta 5, Georgia

USP PALLETAINERS®

Typical of the custom-built Textile Palletainers, these units are equipped with half-side, drop-gate for easy accessibility to contents and caster mounted for easy floor maneuverability.

Another interesting example is this (26"x38"x32") unit—selected by several plants as the best "standard" size for general floor operations.

NOW

CUSTOM-BUILT for the TEXTILE INDUSTRY

Lightweight Sizes and Types to Meet All Needs for Processing, Storage, Interplant Transport and Shipping

Special Snag-Proof Finishes Over Steel Mesh

Safe Stacking . . . Fold-Down and Castered Models

TEXTILE PALLETAINER Applications are Unlimited!

- Contents always visible—always protected
- Stack safely—save floor space
- Higher Capacities—less tare weight
- Smooth, sturdy steel mesh—special plastic, lacquer or paint finishes
- Drop sides, ends or gates—accessibility
- Reinforced deck base—safe lift truck handling
- Fold-down features for freight savings

USP Palletainers are available in pre-engineered, custom-built models to meet Textile Industry application requirements.

Textile Palletainers offer modern container advantages plus unit-handling methods, safety, special protective finishes—and the simplicity of space-saving storage or rapid movement and shipment of unitized loads. Textile Palletainers are rapidly revolutionizing handling methods for in-work storage of cones, springs, quiller bobbins—even delicate yarns. Palletainers, with protective liners, have proven invaluable for threads through all stages of wet and dry finishing, storage and shipment.

This plant saves valuable floor space by stacking their Textile Palletainers during processing and storage operations.

Write Today... for complete information and prices on USP Textile Palletainers to meet your need.

Regular Heavy Duty Hi-Lods Palletainers are immediately available in a wide range of standard sizes, types and capacities to 6000 lbs. per unit.

PALLETAINERS ARE MANUFACTURED EXCLUSIVELY BY:

UNION STEEL PRODUCTS CO.

630 N. BERRIEN ST. ALBION, MICHIGAN

Manufacturing plants also in Compton, Calif. and Waterloo, Quebec, Canada

SHORTS & REMNANTS

(from page 10)

and-wear (Nov. 1958) continue to come in; for instance, from **N. S. Newman,** supt., Exeter (N. H.) Mfg. Co.; **A. Goldfarb,** United International Corp., div. of United Merch. & Mfrs., Inc., NYC; and **H. S. Merrell,** product director, Chicopee Mfg. Corp., Milltown, N. J.

TI in the Movies

Industrial Management Society reports that a 10-minute color film with optical sound, entitled "TI and You," can be rented from Modern Talking Picture Service of Chicago. We were going to rent it to do a little promotion with, but we read on and found that "TI" is Texas Instruments, so we dropped the whole project.

►Never underestimate the competitive spirt of the male: Eugene Tellhauer of Hempstead, N. Y., won first prize in the crocheting division of a recent domestic arts competition at Trenton, N. J.

Tax Talk

With the public debt running at around $270 billion, and the budget at $70-odd billion, maybe we're forgetting just how much a billion dollars is. Well, how's this: The interest ON THE INTEREST of a billion dollars is $70,000 a *week*. And now a company in California is building a new type aircraft that may be useful to taxpayers watching all those billions disappear, while taxes go away out into orbit. This new aircraft is called a "flying barrel."

Another Mechanistic

"Don't pay no attention to that Joe Sliver [TI for April, p. 10]. Hes the worst mechanistic I ever seen. And he cant card worth a dam either.

ROB BOBBINS

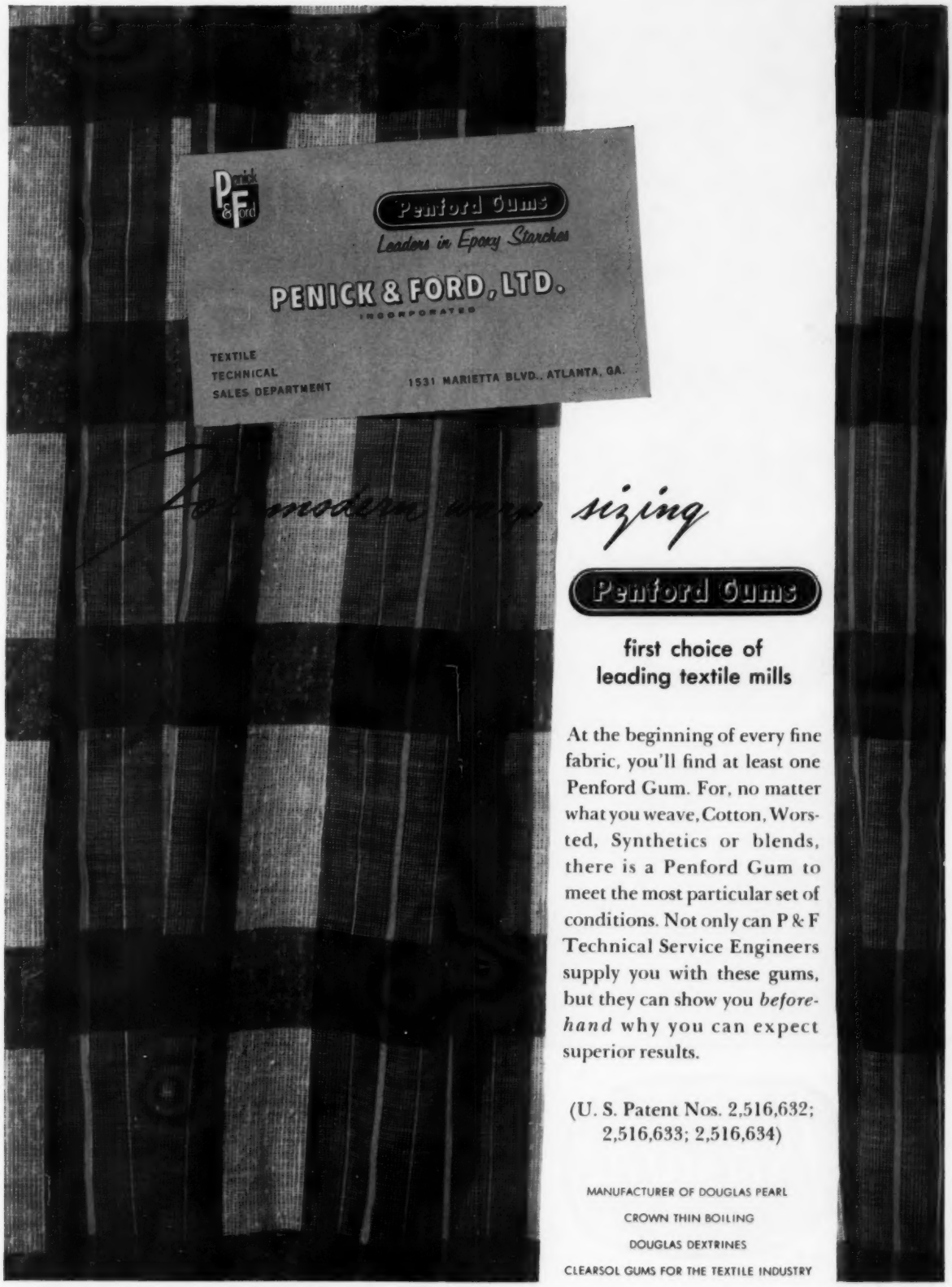
And **Joe Sliver** wrote again to thank us for another lesson in the composition of clear, gem-like prose. He found a 72-word sentence on page 93 of TI for March.

Yankee Ingenuity

An Atlantic City company, specializing in unusual gifts, lists the following in its new catalog:

"Gigantic flowering cotton seeds. Grow to fabulous 3½ feet tall. Takes only five months to reach maturity. New and unusual flowers change

(Continued on page 28)



Penford Gums

first choice of leading textile mills

At the beginning of every fine fabric, you'll find at least one Penford Gum. For, no matter what you weave, Cotton, Worsted, Synthetics or blends, there is a Penford Gum to meet the most particular set of conditions. Not only can P & F Technical Service Engineers supply you with these gums, but they can show you *beforehand* why you can expect superior results.

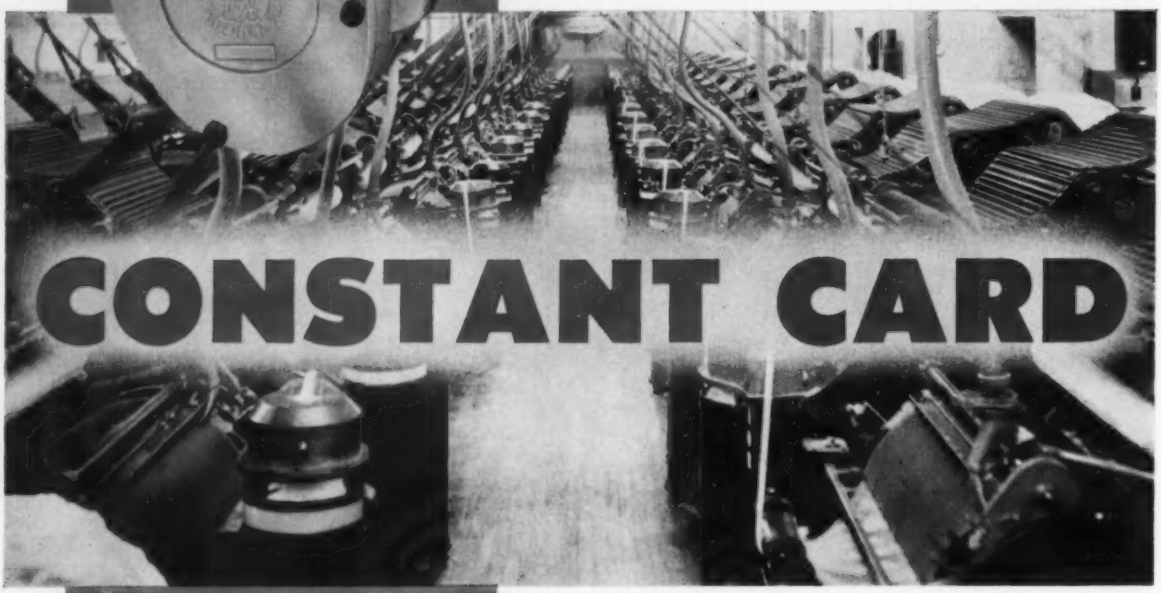
(U. S. Patent Nos. 2,516,632; 2,516,633; 2,516,634)

MANUFACTURER OF DOUGLAS PEARL
CROWN THIN BOILING
DOUGLAS DEXTRINES
CLEARSOL GUMS FOR THE TEXTILE INDUSTRY

TEXTILE TECHNICAL SALES SERVICE AND FIELD DEVELOPMENT

PNEUMAFIL

PROUDLY ANNOUNCES...



CONSTANT CARD

The successful use of CONSTANT CARD by mills throughout Europe and Asia indicate its destiny to become standard and essential equipment with the American textile industry. There is a 170 card installation in the United States, and many more leading mills are starting to make installations. Equipment is available for immediate delivery.

©Pneumafil Corp. 1959

PNEUMAFIL®

Pneumafil Corporation announces its appointment under exclusive license to manufacture and supply to the United States and other North American mills, the famous CONSTANT CARD which was developed and perfected by C. A. Constant Card, Barcelona, Spain.

CONSTANT CARD is a self-contained, vacuum suction system which greatly improves the carding action of the cotton-type card by maintaining a constant fiber load on the cylinder, thereby giving a superior and constant carding action between flats and cylinder.

Stripping cycles are increased up to 120 hours, resulting in phenomenal fiber savings, labor savings, and quality improvements. The equipment pays for itself in a very short time.

A Pneumafil representative will be pleased to call, at your convenience, to discuss all aspects of CONSTANT CARD.

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA

Other Products for Progress— UNIT SYSTEM • LINT FREE CREELS
PNEUMASTOP • CENTRAL SYSTEMS • PNEUMACLEAR • PNEUMAKOOL

FINEST *Quality*

Flat Steel Heddles Since 1897 from Stehedco

Preferred by ninety-nine out of a hundred mills for longer, trouble-free production.

Ever since flat steel heddles were first introduced to America by Steel Heddle Mfg. Co., the highest standards of quality have been maintained. You can depend on STEHEDCO.

Stehedco has always been first to introduce the newest improvements, and there are Stehedco flat steel heddles of every type for every kind of weaving. They are expertly made of finest quality steel, highly polished to handle your most delicate yarns or heaviest fabric.

Make your next order for Stehedco Quality heddles.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
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GREENVILLE, S.C.
Southern

H-5810

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

Any dyer, purchasing agent, chemist or mill official knows the value of purity — in both the purchasing of raw materials and the processing of the finished product.

Take salt, for example. About one-half its cost is freight! So, they say: "Why pay for shipping unwanted impurities?" And the fact is — you can't buy a purer rock salt than Jefferson Island.

For all salt needs — rock or CMF (Calcium Magnesium Free) — most companies call The Man from Diamond Crystal. Why don't you? He has the facts, the proof, the service.

Diamond Crystal Salt Co., St. Clair, Michigan

Plants located at Akron, Ohio;
Jefferson Island, Louisiana; St. Clair, Michigan.

Jefferson Island DIV.

DIAMOND CRYSTAL SALT CO.

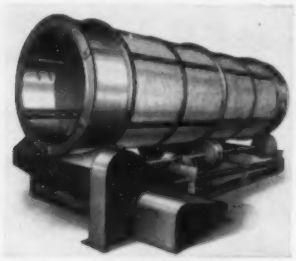
Since 1852

FIBRE PROCESSING MACHINERY by SARGENT

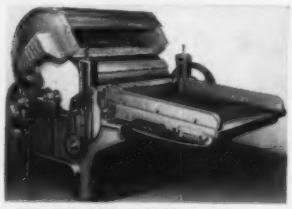
From Bale Opener through Dryer, Sargent's modern fibre processing system gives you completely automatic continuous production . . . an uninterrupted straight-line flow of quality-protected fibres at an economy you cannot afford to overlook. Let us tell you more.

FEEDERS • OPENERS • PICKERS • BLENDERS
WASHERS • DRYERS • TOP & YARN HANDLING
AND SPECIAL PURPOSE MACHINERY

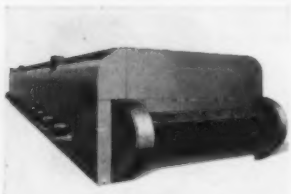
BALE OPENER AND PICKER
Continuous opening, picking and feeding, cotton linters or staple. Excellent on machine-picked cotton.



SQUIRREL CAGE DUSTER
Continuous dusting of heavy grease wools, waste, rags. Also very efficient blender.



WET AND DRY PICKER
Highly versatile—for fibres after bleaching, after dyeing. Works equally well with wet or dry fibres.



STOCK DRYER
Leads all dryers for performance and dependability on scoured or dyed wools, cotton, synthetics.

MIXING PICKER
For continuous blending—all fibres.

FIBRE PROCESSING SYSTEM
Section of recent installation showing high economy, complete dependability. Fibres are not handled from opening to drying.

STAINLESS STEEL WASHER
For scouring, bleaching, acidifying.

C. G. SARGENT'S SONS CORPORATION
Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA • CINCINNATI • ATLANTA • CHARLOTTE • HOUSTON • CHICAGO • DETROIT • TORONTO

SHORTS & REMNANTS

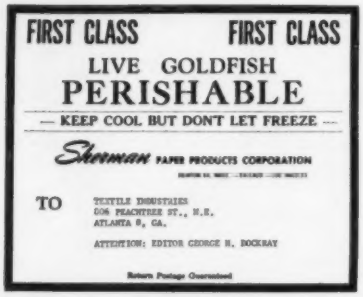
(from page 22)

color from white to a soft pink. Produce an average of 10 balls per plant. Easy to grow indoors or out . . . Package of 30 to 35 seeds—$1."

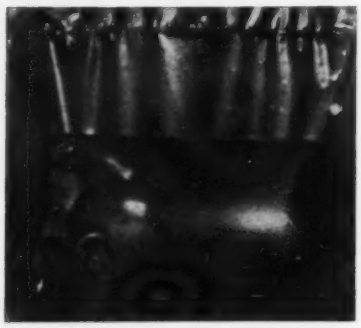
Probably not many cotton farmers would recognize that description. Maybe a new way to solve the cotton problem.

Fish Story

A package from Boston arrived at our office the other day, addressed like this:



Sure enough, it did have a polyethylene bag inside, containing two goldfish swimming about, more or less happily. We made their portrait, and here they are:



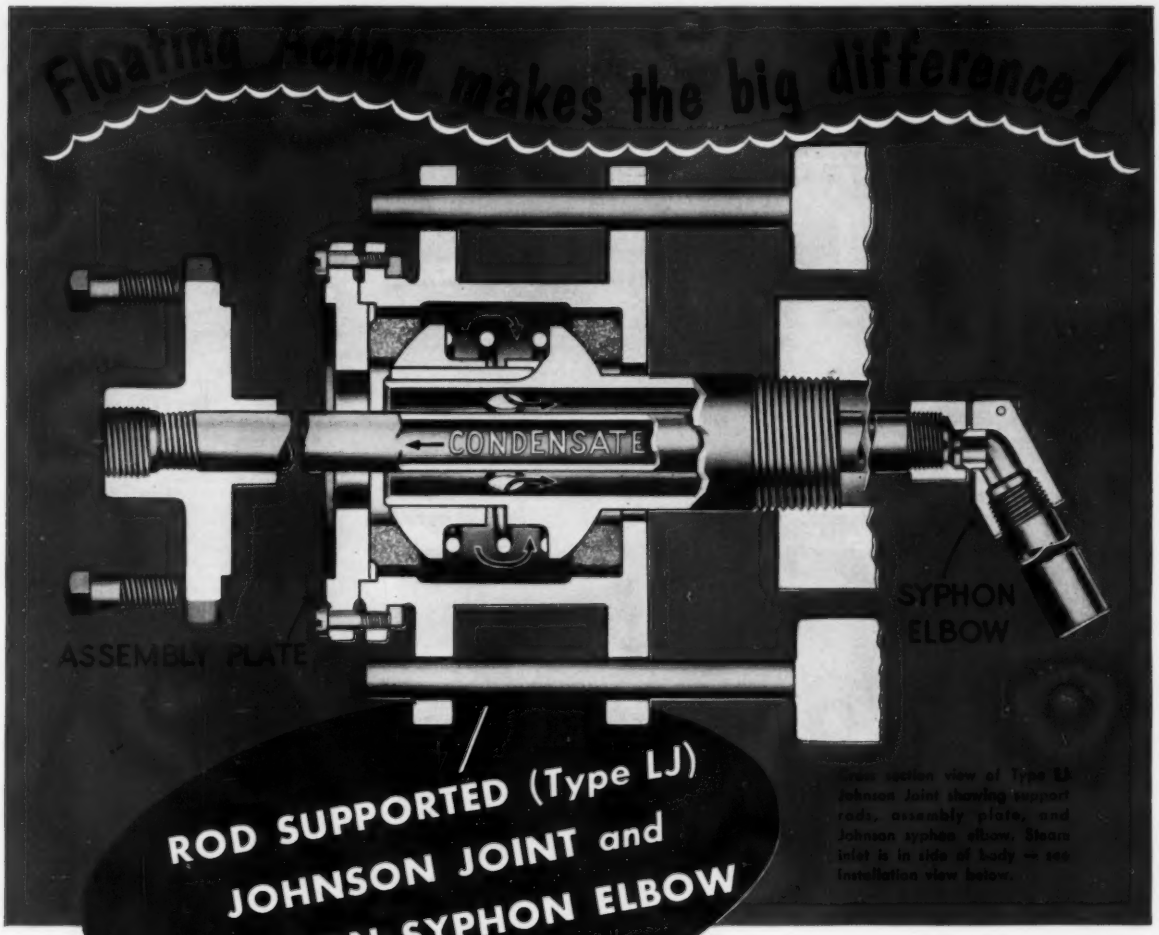
Oh, yes, the reason they were sent to us: **Charles A. McElroy,** advertising and promotion manager for Sherman Paper Products Corp., wanted to show us that Corro-Bags can even be used to ship goldfish through the mails, if you should happen to want to mail some goldfish. And so they can.

Riemer Writes Again

This year being the 100th anniversary of the birth of A. E. Housman, we are presenting this month a poem by **Harry Riemer.** Harry is now a consultant for Henry Bach Associates, and until he retired last year was editor of *Daily News*

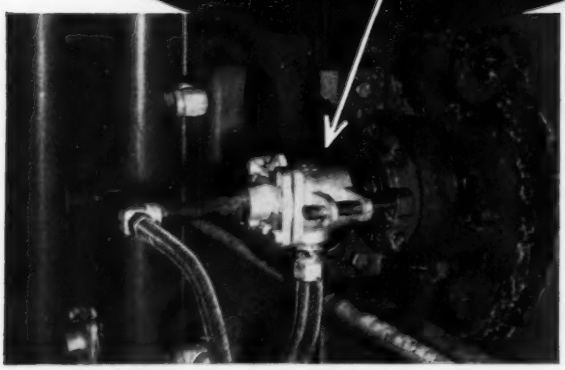
(Continued on page 30)

Floating Action makes the big difference!



Steam section view of Type LJ Johnson Joint showing support rods, assembly plate, and Johnson syphon elbow. Steam inlet is in side of body — see installation view below.

ROD SUPPORTED (Type LJ) JOHNSON JOINT and JOHNSON SYPHON ELBOW



Rod-supported Johnson Joint installed in southern mill on 23" diameter x 60" face dry cans operating at 100 yards per minute, 35 lbs. steam pressure.

Write for complete information on Type LJ Joints with Syphon Elbows.

This is the Johnson Joint combination that is proving especially suited for dry cans, print cans and 30" cylinder slashers.

The Type L body has lugs cast on it, so it can be hung on simple supporting rods. All the weight of the housing and pipe connections is thus lifted from the rotating assembly of the joint. These rotating parts "float" freely inside — have only their primary task of maintaining a seal. Longer service life and reduced down-time are direct results.

Perfect team mate is the Johnson Syphon Elbow — successor to the old unwieldy, long radius syphon pipes. It opens to pass through the joint, closes of its own weight to a tight seal when in position. The joint is fitted with a special assembly plate to hold internal parts in position when head is removed to insert or remove the syphon pipe.

Most machinery manufacturers now provide bosses on bearing housings which can be utilized for this type of mounting. So that you can try this combination in your own mill we will gladly supply a couple of units for 90-day test, without any obligation.

JC *Products of The Johnson Corporation*

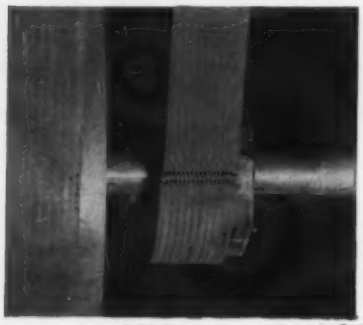
815 Wood St., Three Rivers, Mich.

Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

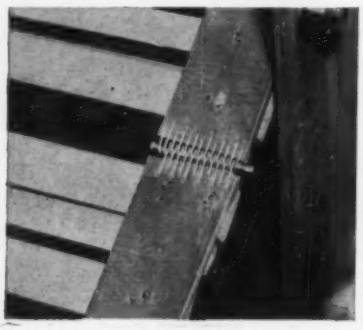
"ENDLESS APRONS ARE HARD TO INSTALL"

says E. M. HYDE, Project Engineer at Proctor & Schwartz, Inc.

A complete batt making line used in the manufacture of cotton batt for top quality mattresses. The unit is designed and built by Proctor & Schwartz of Philadelphia, Pa.



Close-up of Clipper lacing used on drive belt of feed in batt making line



Close-up of Clipper lacing used on a traveling apron in the line

CLIPPER Joints ease installation problem, are as flexible and durable as the belt itself

Feed belts and drive belts are easy to install when Clipper laced. Joints as smooth and durable as the belt itself are easily made by one man using Clipper method. Clipper lacers develop up to 45,000 pounds of pressure to imbed specially designed Clipper steel wire hooks flush with the belt. The strain is evenly distributed across the width of the belt so that the joint is smooth and durable. It operates well on both small and large diameter rollers.

When you have two ends to join, chances are you can join them easier with Clipper hooks and lacers. Any type of belting material in various widths and up to 13/32 inch thick can be laced faster and better by Clipper.

For more information — Detailed product information and case history examples of Clipper machine lacing benefits are contained in Bulletin No. 157. Send for your free copy today.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

SHORTS & REMNANTS

(from page 28)

Record. Harry would be the last to compare his efforts to "The Shropshire Lad," and in fact the lines to follow were written to memorialize the ACMI convention at Palm Beach last March. But anyway, we thought you'd like to read it. Happy centenary, Mr. Housman, wherever you are!

Textile Hope Springs Eternal

There is something wholesome at this meeting
Where competitors exchange a greeting.
Friendships come closer thus over the years;
Anticipation grows as each date nears.

Hope springs eternal sound sense will prevail—
Even the best would gain on greater scale
If each decides that supply and demand
Is the basis for each move and each stand.

World textile progress offers many threats.
We must meet them if we would pay our debts.
Committees report on steps to protect
Against inroads and dangers these reflect.

The right approach could mean profit for all;
It is simple yet some would rather stall.
There is all reason textiles should be sought
Like securities that are widely bought.

These feelings are stirred at ACMI;
Many have faith and want to know why
All can't see wisdom in playing the game
Within reason and the industry frame.

"TI Popular House Plant"

That's what the newspaper headline sent on by a reader says. Seems we mentioned this once before, and this time the article says that persons growing the TI plant (Hawaiian) will have good luck for it wards off "evil spirits." And readers and advertisers will, we hope, find TI (USA variety) good luck, too.

On Wisconsin!

" . . . This June I am graduating as a textile major from the University of Wisconsin and would like to get into the industrial field of textiles which is unusual for someone who is not a Chemical Engineer. . . "

DENYSE C. DUBRUCQ

Madison, Wis.

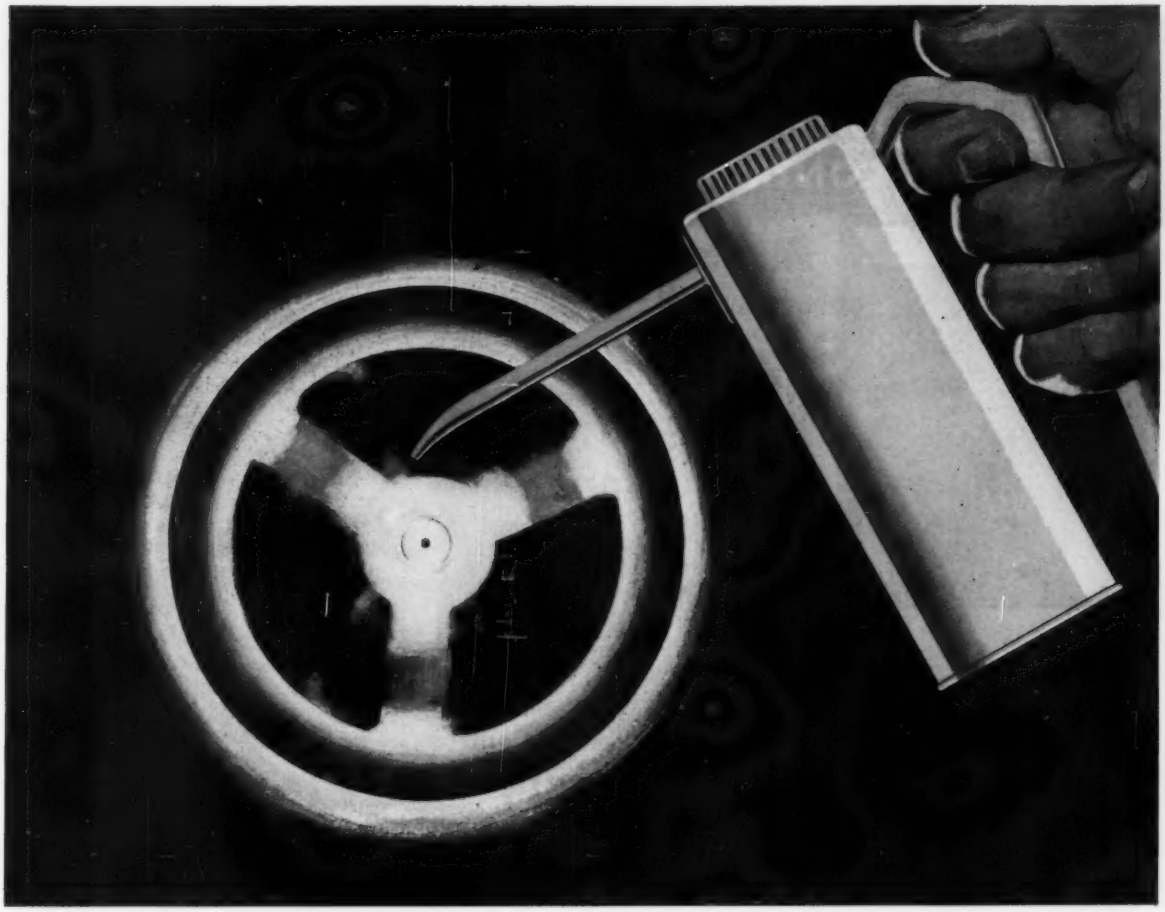
► Textile Deans, is that where all your students went?

Things-Could-Be-Worse Department

In France between 1666 and 1730 —so John Chamberlain says in his new book, "The Roots of Capitalism"—it took more than 2,000 pages to print the government rules established just for the textile industry. And for breaking just those regulations governing printed calicoes, some 16,000 people were either executed or killed in fights with government agents.

But before we get to feeling too smug about the progress made in

(Continued on page 32)



Setting new standards in textile machine lubrication

NEW SHELL VEXILLA OILS

To assure high compatibility with today's synthetic fabrics, a completely new line of premium-quality textile machine lubricants has been developed—NEW SHELL VEXILLA OILS. These new oils are available in a wide viscosity range to satisfy all operating requirements.

Check these outstanding advantages:

1. Excellent Scourability—New Vexilla® Oils are *easily* and *readily* removed through conventional scouring procedures . . . completely eliminate oil stain problems.

2. High Oxidation Resistance — New Vexilla Oils contain special oxidation inhibitors to prevent increase of viscosity during service and storage. High viscosity index base oils minimize thinning out at high temperatures.

3. Eliminate Bearing Corrosion—New Vexilla Oils contain a newly developed rust inhibitor which keeps bearings *clean* and *free from corrosion.*

4. Non-Gummy—New Vexilla Oils contain no fixed oils such as lard, tallow and sperm oils to cause gumming. In automatic lubricating systems, they will not form harmful metallic soaps when in contact with zinc or copper.

5. Outstanding Wetting Properties—New Vexilla Oils offer superior metal-wetting properties because of the carefully engineered balance of components and polar character.

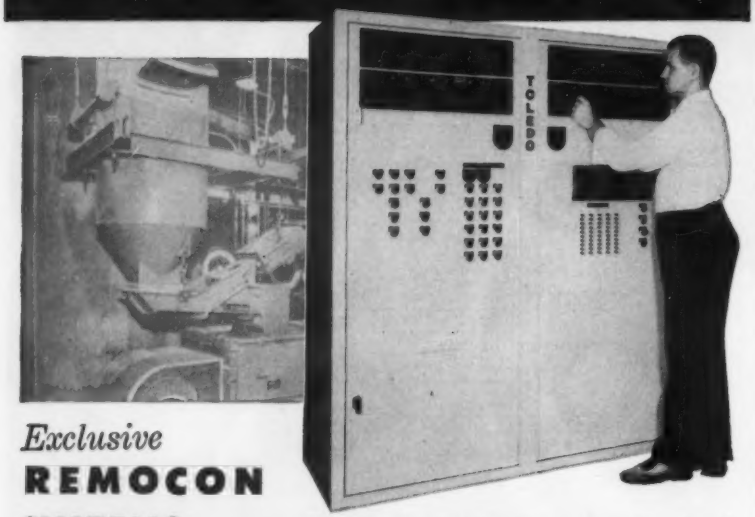
The Shell Industrial Products Salesman will be glad to show you how to reduce maintenance costs and assist in the selection of the appropriate grades for *your* plant operation. Write Shell Oil Company, 50 West 50th Street, New York 20, New York. In Canada: Shell Oil Company of Canada, Limited, 505 University Avenue, Toronto 2, Ontario.

NEW SHELL VEXILLA OILS

. . . quality textile machine lubricants

SHELL

TOLEDO: Prime Source of IDEAS and EQUIPMENT To Solve Your MATERIALS CONTROL PROBLEMS



Exclusive
REMOCON
SYSTEMS... provide Automatic Remote Control of single or multiple scale batching systems!

Control at a convenient remote location is yours with Toledo Remocon. Scale cutoffs adjust instantly for the proportioning requirements of each batch formula . . . no manual adjustments at scales required.

Flexibility allows setting up one formula while another is batching. Any portion of a batch may be run without resetting. Up to 20 or more ingredients can be cumulatively batched into a single weigh hopper. Formulas may be introduced by punch-card or batch board. Weight data may be recorded remotely.

WRITE TODAY for our Bulletin 2964 on modern Toledo Batching Equipment . . . or for specialized help from our Custom Products Engineering Group in solving your problems in batching, weight data processing, counting or classifying.

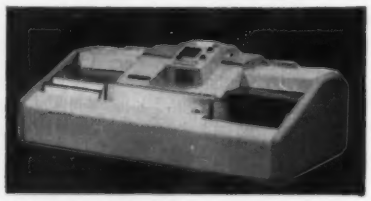
SERVICE Factory-Trained 240 Cities

TOLEDO®

TOLEDO SCALE, Division of Toledo Scale Corporation
Toledo 12, Ohio

Headquarters for Weighing Systems

AUTOMATIC CHECKWEIGHING
Continuous, 100% in-line checkweighing of items from 50 to 200 lbs. at speeds to 40 per minute! Handles sacks, cartons, packages, pieces, parts. Motorized belt—fits into conveyor lines. Numerical counters, remote indication, other features. Ask for Bulletin 2968.



DATA PROCESSING
Weight data and figures can be transmitted from scales to any remote location—to be typewritten, numerically listed and totaled, stored for delayed recording, recorded by tape punch or introduced into a data processing system—all automatically!

(from page 30)

the last 200 years or so, it might be well to note that in 1959, in California, a man has been jailed for selling bottles of Alka-Seltzer tablets at 14¢ below the state "fair-trade" price set by the manufacturer.

Purchasing

You can always count on an attentive audience when you discuss buying of machinery, supplies, and the other things a textile mill uses. And in fact a survey we made showed that "Dishonest Practices," part of a special feature on purchasing, was the most popular article in our February, 1959, issue. Recent requests for reprints of the special feature came from **J. H. McDowell, Jr.**, PA, Dixie Mercerizing Co., Chattanooga, Tenn.; **Herbert W. Wade**, PA, Kayser-Roth Hosiery Co., Inc.. Burlington, N. C.; **J. T. Holt**, PA, Erwin Mills, Inc., Durham, N. C.; and **Robert L. Liles, Jr.**, QC, Russell Hosiery Mills, Inc., Star, N. C.

Trade Topics Enthrall

" . . . May we take this opportunity of reiterating how much we enjoy reading of current trade topics in TEXTILE INDUSTRIS . . . "

H. J. FRANKLYN
V-P, Lynrus Finishing Co., Inc.
Poughkeepsie, N. Y.

Wants Safety Posters

"Our mill has started a safety campaign, and we are greatly interested in securing safety posters for the textile industry. . . "

R. A. LINDSAY
Asst. to the Works Mgr.
Hamilton Cotton Co. Ltd.
Hamilton, Ont.

► National Safety Council does a good job on textile safety posters.

Madison Ave., Move Over

This refreshing piece of ad copy appeared in a recent issue of *The Trion Facts*, which while it is the employee newspaper for Riegel Textile Corp., Trion, Ga., also accepts outside advertising:

NOTICE
To the LaFayette
Laundry Customers

You get your money each week, and I get mine. We both will be doing fine. But if you get yours and I don't get mine, what in the world am I going to do? Do without—for I have all bills to

(Continued on page 38)

New automatic monitor guards the consistent purity of Westvaco® CHLORINE

Among the most modern devices for controlling chlorine cells is Westvaco's automatic chromatographic analyzer. Keeping a constant eye on the chlorine stream, it makes continuous quantitative analyses just prior to liquefaction to detect and record the contaminating presence of inert gases.

This is another of the careful quality controls installed during our recent multimillion-dollar plant expansion and modernization program. It's one more reason why we are now supplying more and better chlorine than ever before.

From our strategic location at South Charleston, W. Va. we are in excellent position to give you fast, dependable service throughout the East, mid-South and Midwest. Let us quote on your needs now.

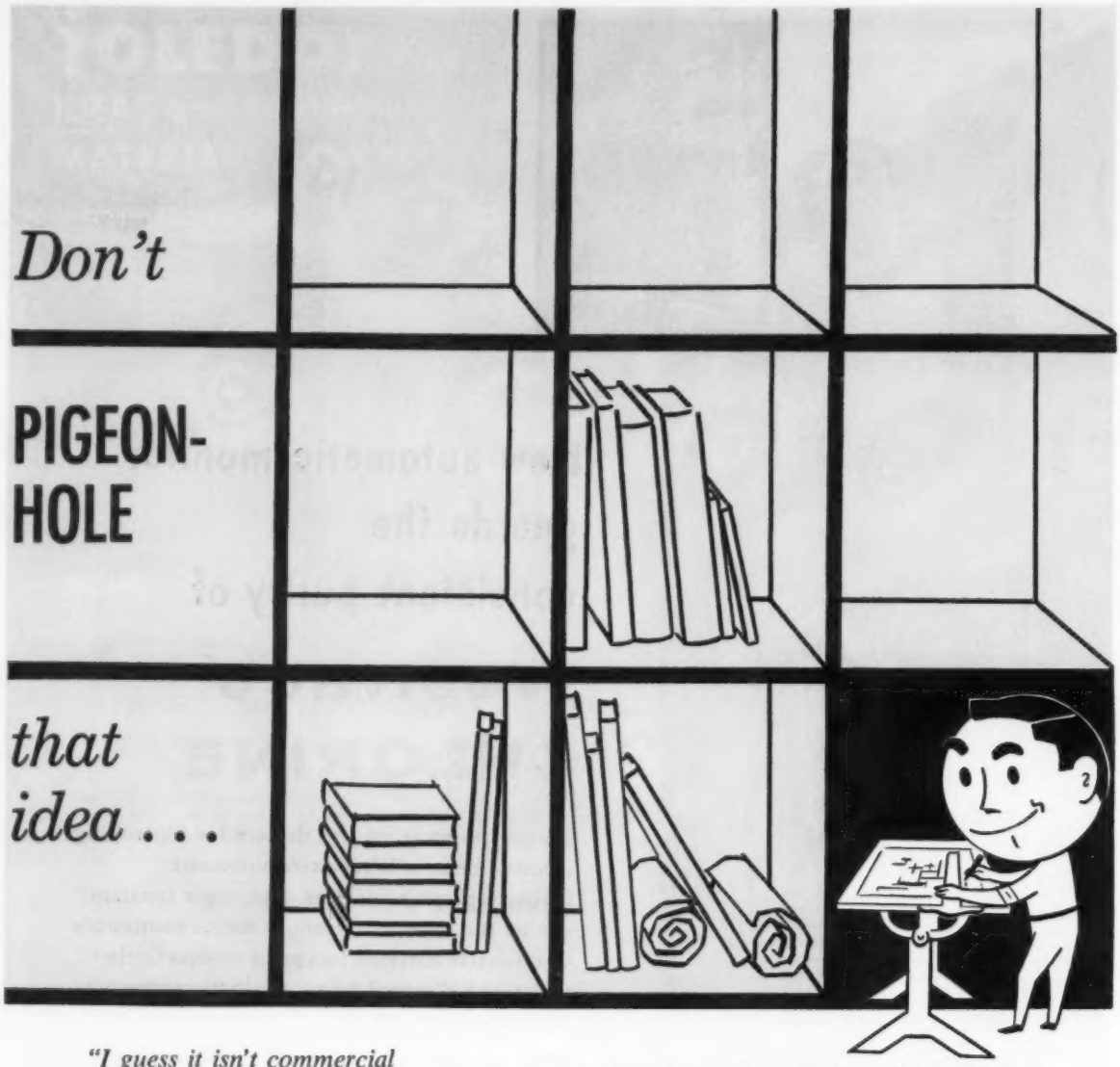
Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco Chlor-Alkali Division

General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

For further information use Handy Return Card, Page 187



"I guess it isn't commercial . . . I'll forget it."

"It probably isn't economical . . . I might as well file it away."

"Its development will cost us more money than we can afford . . . let's put it off."

How many ideas for an improvement in a machine or an improvement in a process have you pigeon-holed because you didn't know how to get an objective evaluation of their economical or practical application?

Butterworth has changed all that. Many ideas have been brought to practical development in cooperation with Butterworth. A machine-building experience in textile finishing, synthetic fibers, plastics, and special machines for processing industries — plus specialized knowledge and experience in electronics, atomic energy, and missile development — makes Butterworth the place to evaluate your ideas.

Write for a copy of Butterworth's "Guide for Submitting Suggestions."

BUTTERWORTH

VN

H. W. BUTTERWORTH & SONS COMPANY

Division of Van Norman Industries, Inc.

BETHAYRES, PA. • SINCE 1820

Illustration Courtesy of BEECH-NUT LIFE SAVERS, INC.

National STARCH PRODUCTS INC.

National STARCH and CHEMICAL CORPORATION

WE'VE 'OUTGROWN' OUR NAME

the addition of the word **CHEMICAL** spells out our broader base of operation

We've changed our corporate name to reflect properly the results of our activities in chemicals and chemical products—*which now constitute about one-third of our current business!*

Our policy of selective research and product development, which was accelerated by the military packaging demands of World War II, has made 'NATIONAL' one of the leading producers of vinyl acetate polymers and copolymers in emulsion form for packaging adhesives, coatings, textiles, papermaking, woodworking, architectural laminations and paints.

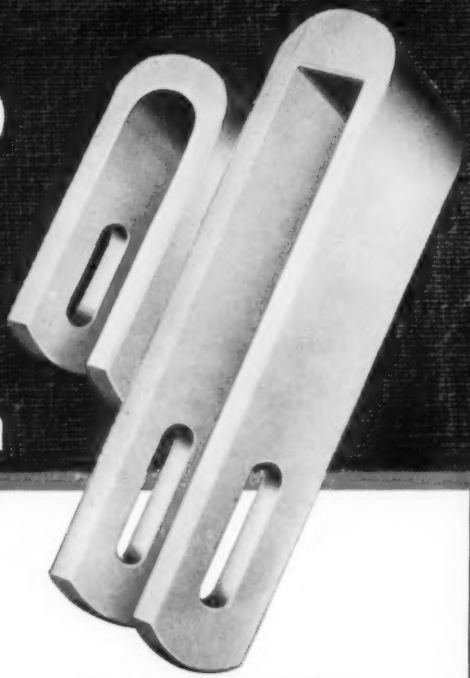
The prominence of the word 'STARCH' in our new corporate name confirms our substantial and continued interest in the future of starches, starch specialties and adhesives—*which constitute the major portion of our business!*

The addition of the word 'CHEMICAL' in our new corporate name reflects not only our increased interest in chemicals and chemical products . . . but also the important part that chemistry has played in the selective research and development of new starch derivatives.

NATIONAL STARCH and CHEMICAL CORPORATION • 750 THIRD AVENUE, NEW YORK 17, N. Y.

Why this lug strap lasts longer...

insures smoother operation



Because of the great strength of Tex-Hide—a product of Gates *specialized* research—the block can be molded into the strap without the use of bolts or rivets. As a result, straps are streamlined and light in weight.

Yet, because of their superb resilience, they will give you longer service, and smoother operation, *than any other strap you have ever used.*

2 big advantages of Gates Tex-Hide Lug Straps

1. Tex-Hide Lug Straps combine great strength with unsurpassed resiliency. Therefore, they soak up blows and shocks *without taking any permanent stretch.*

2. The great resiliency also insures long life for *all parts* of the picking motion, and gives extended periods of operation *without any strap adjustments.*

Super Tex-Hide Lug Straps

Users report up to 5 times longer service on their heaviest looms from Super Tex-Hide than from any other strap.

New Thin-Tex Lug Straps

When extreme flexibility and much lighter weight are needed, Thin-Tex Lug Straps give up to 25% longer life than ordinary straps...and smooth out loom operation.

Gates Distributors are in the Yellow Pages

Gates

The Gates Rubber Company, Denver, Colorado

The Mark of *Specialized* Research

Other Products...

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Tex-Hide Harness Straps

Tex-Hide and Vulco Loop Pickers

Reversible Pickers

TPA 325

Gates Lug Straps

INCREASE Wool Spinning Production 10% ...and more!

WHITIN BALLOON CONTROL RINGS

Production increases ranging from 10% up to 25%, with no increase in ends down, can be secured by the application of Whitin balloon control rings. They may be applied not only to Whitin wool spinning frames but to other makes as well — and at very moderate cost.

Easily applied by your mill mechanic, an installation consists of a single split ring for each spindle, set on a channel which is adjustable to the optimum operating position, usually 5½"-6" above the ring rail.

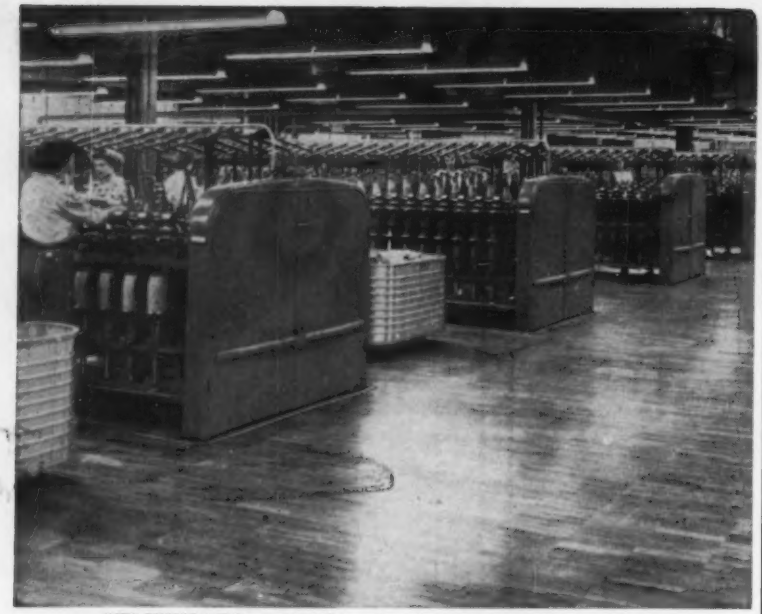
Only Whitin balloon control rings can be wound down to the ring rail completely out of the way — a competitive advantage of special importance allowing easier, faster doffing. Other advantages include: elimination of damage caused by yarn whipping against separators; smoother traveler action and reduced ring wear; split ring design for easy threading; regular or reverse twist operation without repositioning control rings.

Try a frame of low-cost Whitin balloon control rings. You'll agree it's the economical way to increase wool spinning production.

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



DIRT-RESISTANT Tennantized floor allows faster sweeping. Saves manhours.

Why most money-making mills have TENNANT-maintained floors

Mills that make money *today* usually know their maintenance costs to a penny.

That's why about 9 out of 10 successful mills, large and small, use the TENNANT SYSTEM of Floor Maintenance.

They know, from their own cost records, that this system provides clean, bright floors *at the lowest cost per sq. ft. of any floor maintenance method* available today. Here's why:

SAVES MANHOURS—*Tennantized* floors have 3 times the dirt resistance of most textile floors. Saves cleaning time, cuts sweeping costs, etc.

How the TENNANT SYSTEM cuts floor care costs...

1 **SAVES TIME.** Dirt is easily wiped off surface.

2 **SAVES FLOOR SEAL.** Tennantized floors seldom need refinishing.

3 **SAVES BUFFING.** New method brightens floor; cuts buffing time as much as 80%.

REQUIRES LESS FLOOR SEAL—New custom-fitted TENNANT seals *last longer than any comparable materials we know of.* Cuts annual seal costs and recoating expense. WRITE TODAY *for full details. G. H. Tennant Co., 737G N. Lilac Drive, Minneapolis 22, Minn.*

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

(from page 32)

pay at end of each week.

Yours Truly,
E. B. GRIFFIN

Want to Reprint

"The Industrial Experimental Program is a branch of the School of Engineering at N. C. State College . . . purpose of providing technical information . . . creation and development of small industry within the State.

"We select timely and appropriate articles . . . reprint and make available to North Carolina industry . . . interested in 'How to Control Labor Costs,' by Rufus Allen [TI for Feb., 1959]."

STUART D. COWARD
Industrial Experimental Program
Raleigh, N. C.

" . . . for our April issue we would like to condense 'Daily Report of Inventory Condition' [TI for Sept., 1958]."

MORTIMER J. SULLIVAN
Managing Editor
The Automatic Office
New York, N. Y.

Man-Made Fibers

Requests for "Properties and Uses of the Man-Made Fibers" chart, which appeared in August, 1958, continue to come in. All of the information on this chart will be brought up to date for our next man-made fibers special feature, to appear in August, 1959. Data on metallic yarns will be given, too.

Miscellaneous Wants

Literature and prices on Marshall & Williams selvage uncurler—**Albert W. Rittenhouse,** PA, Frankford Woolen Mills, Philadelphia, Pa.

Address of Asbestos Textile Institute—**Donald S. Beale,** Atlas Fibers Co., Inc., Beacon, N. Y.

High-speed rubber-yarn covering machine—**A. Honig,** sec., Corde Mfg. Co., NYC.

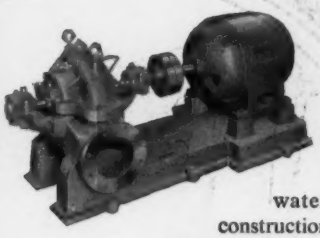
Reprints of safety articles—**Claus Halberstaedter,** Washington State Dept. of Labor and Industries, Olympia, Wash.

Reprints of TI's "This Is Textiles U.S.A." series—**Werner Schoeneberg,** chemist, Celanese Corp. of America, Charlotte, N. C.

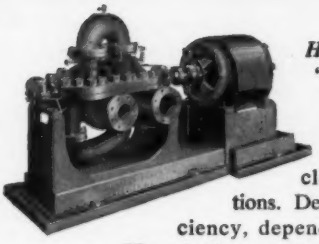
Lightweight, 10 - key calculator (Bohn)—**J. B. Crosby,** overseer spinning, Willingham Cotton Mills, Macon, Ga.; and **Yuan Beauleu,** lab.

(Continued on page 40)

HOW MUCH WILL IT COST YOU

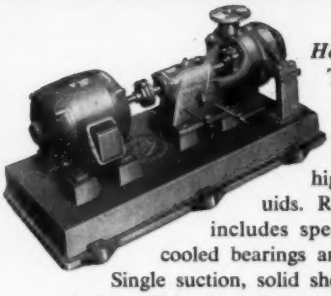


Clear Water Pumps: "Buffalo" Double Suction Pumps assure maximum efficiency in clear water service. Rugged construction provides long life with minimum maintenance. 10 to 14,000 gpm capacities. Write for Bulletin 955-R.



High Pressure Pumps: "Buffalo" Multi-Stage Pumps are ideal for boiler feed and other clear water applications. Designed for top efficiency, dependability, long life. These husky pumps operate against heads as high as 1500 ft., in capacities to 900 gpm. Write today for Bulletin 980-D.

Non-Clogging Pumps: "Buffalo" Diagonally Split-Shell Pumps are specially designed for moving high consistency liquids. Down-time, wear and wedging are reduced. Rubber-lined models are available for pumping corrosive or abrasive liquids. Write for Bulletin 953-K.



Heat Transfer Pumps: These special "Buffalo" pumps are engineered for handling high-temperature liquids. Rugged construction includes special alloys, water-cooled bearings and special packing. Single suction, solid shell design is highly efficient. Write for full details.

Chemical Liquid Pumps: These special "Buffalo" Pumps are engineered for severe service in handling most corrosive, abrasive or high consistency liquids. Ten special types are available in a variety of trim. Write for Bulletin 982-A.

NOT TO INSTALL "BUFFALO" PUMPS?

How "Buffalo" Pumps Can Save You Money Right Away: "Buffalo" offers a broad line of pumps. This means you can usually choose the right pump to fill almost every liquid-moving need. With "Buffalo" Pumps you pay only for the type, size and capacity required — no more. This often means substantially lower initial cost.

How "Buffalo" Pumps Can Save You Money Over the Years: "Buffalo" Pumps are engineered for peak hydraulic efficiency. This gives you consistently lower pumping costs. "Buffalo" Pumps are ruggedly built throughout. Extra heavy-duty components reduce maintenance costs over a longer productive life span. "Buffalo" Pumps are designed for quick, easy access to inner parts. Thus routine maintenance costs are lower. "Buffalo" Pumps feature parts interchangeability. This means further savings in reduced parts inventories.

Your nearby "Buffalo" Engineering Representative will be glad to help you choose the pumps that will most economically fill your needs. Phone him today, or write us direct.

"Buffalo" PUMPS

BUFFALO PUMPS
Division of Buffalo Forge Co.
175 Mortimer St. Buffalo, N. Y.

Canada Pumps, Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

THE BELT THAT RESISTS CORROSION

Scores of case histories prove that Texalon, the all-synthetic belting by Rhoads resists deterioration under wet or corrosive conditions — moisture, salts, greases, many solvents and other industrial chemicals.

You'll get more productive hours from Texalon in many applications for power transmission, carrier tapes or light conveyors. It springs without stretch, rarely needs shortening.

Texalon can be used on small pulleys with high belt speeds and high pulley ratios. Works well on both short and fixed center drives. Easily made endless on the job by untrained mechanics in a matter of minutes.

Belt widths up to 24". Write for bulletin to J. E. Rhoads & Sons, Wilmington 99, Delaware.

Typical Texalon Applications

WOOL PICKER . . . Machine sprays oil. Texalon installed to eliminate frequent belt shortening. Now in operation 18 months without a single adjustment for tension.

SPINDLE TAPES . . . Texalon replaced cotton and woven nylon tapes in rug mill. Reduced maintenance due to longer life. Better product because of consistent spindle speeds, no stretch, no oil absorption.

MACHINE DRIVES . . . Modernization program demanded increased machine speeds in textile mill. Texalon permits greater speeds, greater capacity from existing machines.

RHOADS

Where the Job Selects the Belt . . . Since 1702

SHORTS & REMNANTS

(from page 38)

supvr., Dominion Textile Co., Sherbrooke, P. Q.

Bullet-proof vests — Mill selling house officials visiting southern accounts where disgruntled ex-employees are likely to practice target shooting in the front office.

Large coilers (Southern States Equipment Co.)—**C. E. Hoffmaster,** director of purchases, Narrow Fabric Co., Reading, Pa.

Reprints of various articles from Dec. and Jan. issues — **Katherine Glass,** technical librarian, Callaway Mills Co., LaGrange, Ga.

Information on depreciation and obsolescence in textiles—**R. E. Moyer,** Robert E. Moyer Associates, Catasauqua, Pa.

Reprints offered in S & R for Nov., 1958—**Leslie Liang,** chief engineer, Cia. G. Gasparian Ind., Sao Paulo, Brazil; and **Jose M. Uranga,** tech. director, C.G.B.R.M., Temperley, Argentina.

Twelve sets of tear sheets, "Circular Knit Leotards" (TI for Jan., p. 122)—**Si Margolis,** Ginsberg Machine Co., New York, N. Y.

Where to get labeling machines—**W. R. Spivey,** president, Walridge Hosiery Mills, Marvel, Ark.

Further information on nylon winder cam—**A. Flaxington,** supt., Coats & Clark, Inc., Central Falls, R. I.

More information on Scott & Williams ad (p. 154, Feb.)—**W. E. Keller,** supt., Providence Braid Co., Pawtucket, R. I.

More on new cloth splicing technique described on page 182 of TI for Feb.—**John La Terra,** printing supvr., Robertson Bleachery & Dye Works, Inc., New Milford, Conn.

Further information on portable piece end sewing machine (Birch Bros.)—**Leroy W. Krasley,** Krasley Bleach & Dye Works, Royersford, Pa.

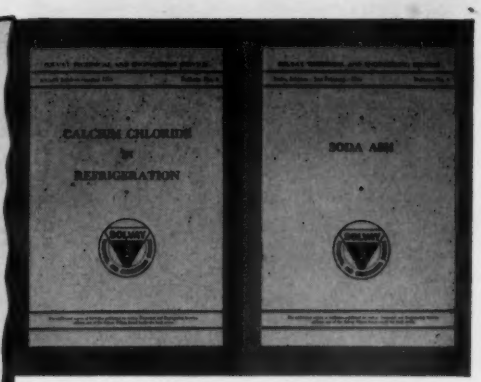
Copies of papers presented at Seventh Chemical Finishing Conference —**Teodoro Rivero,** Colonia, Uruguay.

Information on knitting, dyeing, and finishing circular knit goods of stretch yarns—**H. M. Strub, Jr.,** mgr., technical dept., Duplan Corp., Winston-Salem, N. C.

How many weights and widths of cotton flannelette are woven, dyed, and finished and what are the names of the mills and the converters of these fabrics?—**W. H. Reynolds,** specifications engr., Board of Education, Chicago, Ill.

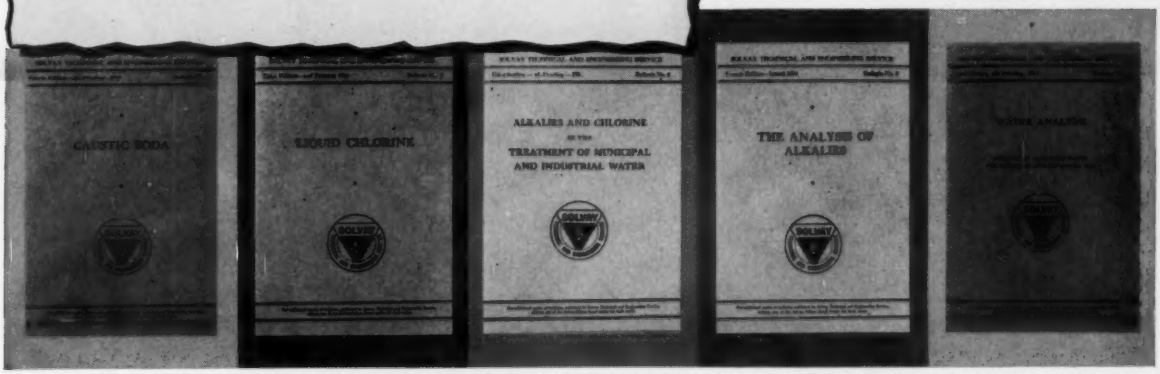
TO HELP YOU IN YOUR CURRENT OPERATIONS— SOLVAY TECHNICAL BULLETINS

Authoritative information on Soda Ash, Caustic Soda, Calcium Chloride, Bleaching, Water Treatment and Refrigeration Brine. These bulletins include properties, use, storage, handling, testing, analytical procedures and other data from accepted sources, from SOLVAY's own research and from our vast store of field experience accumulated during the past 75 years. Check contents of individual bulletins and fill in coupon below.



No. 4—Calcium Chloride in Refrigeration: 64 Pages—Properties of Calcium Chloride Brines; Preparation and Maintenance of Calcium Chloride Brines; Industrial Applications of Calcium Chloride Refrigerating Brines.

No. 5—Soda Ash: 64 Pages—Properties; Handling and Unloading of Bulk Shipments, Bags and Barrels; Storage; Weighing, Proportioning and Feeding Devices; Sampling and Analysis; Precautions; Conversion Tables.



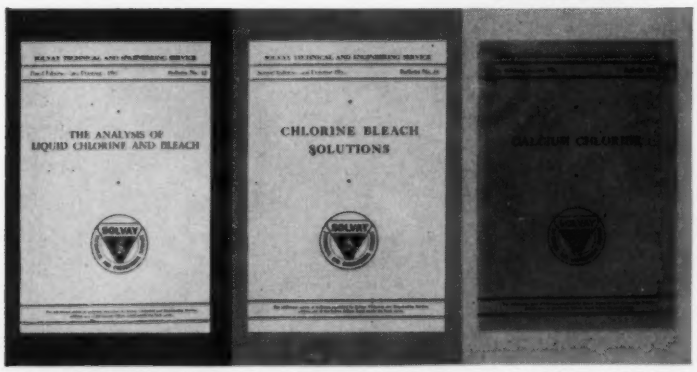
No. 6—Caustic Soda: 84 Pages—Properties of Caustic Soda and Its Solutions; Handling and Dissolving; Nature and Advantages of Liquid Caustic Soda; Unloading and Handling Liquid Caustic Soda; Conversion Tables.

No. 7—Liquid Chlorine: 60 Pages—Properties; Containers; Safe Handling; Equipment and Accessories; Accident Procedure.

No. 8—Alkalies and Chlorine in the Treatment of Municipal and Industrial Water: 92 Pages—Natural Water and its Impurities; Water Softening and its Advantages; Softening Processes; Municipal and Industrial Water Purification; Chemical Feeding Equipment, etc.

No. 9—The Analysis of Alkalies: 80 Pages—Procedure for the Analysis of Nine Major Alkalies; Methods; Reagents, Indicators, Standard Solutions Used; Atomic Weights—1952; Temperature Conversion.

No. 11—Water Analysis: 100 Pages—Mineral Analysis of Water; Stationary Boiler Water Analysis; Municipal Water Supplies; Railroad Water Supplies; Swimming Pool Waters; Polluted Waters; Reagents, Indicators and Standard Solutions; Conversion Tables.



No. 12—The Analysis of Liquid Chlorine and Bleach: 72 Pages—Liquid Chlorine; Sodium Hypochlorite; Calcium Hypochlorite; Reagents, Indicators, Standard Solutions.

No. 14—Chlorine Bleach Solutions: 68 Pages—General Properties of Hypochlorous Acid and Its Salts; Types of Industrially Important Bleach Liquors; Equipment; Operation, etc.

No. 16—Calcium Chloride: 92 Pages—Properties of Calcium Chloride and Its Solutions; Unloading and Handling Calcium Chloride in Solid Forms and Liquid; Conversion Tables.

Allied Chemical

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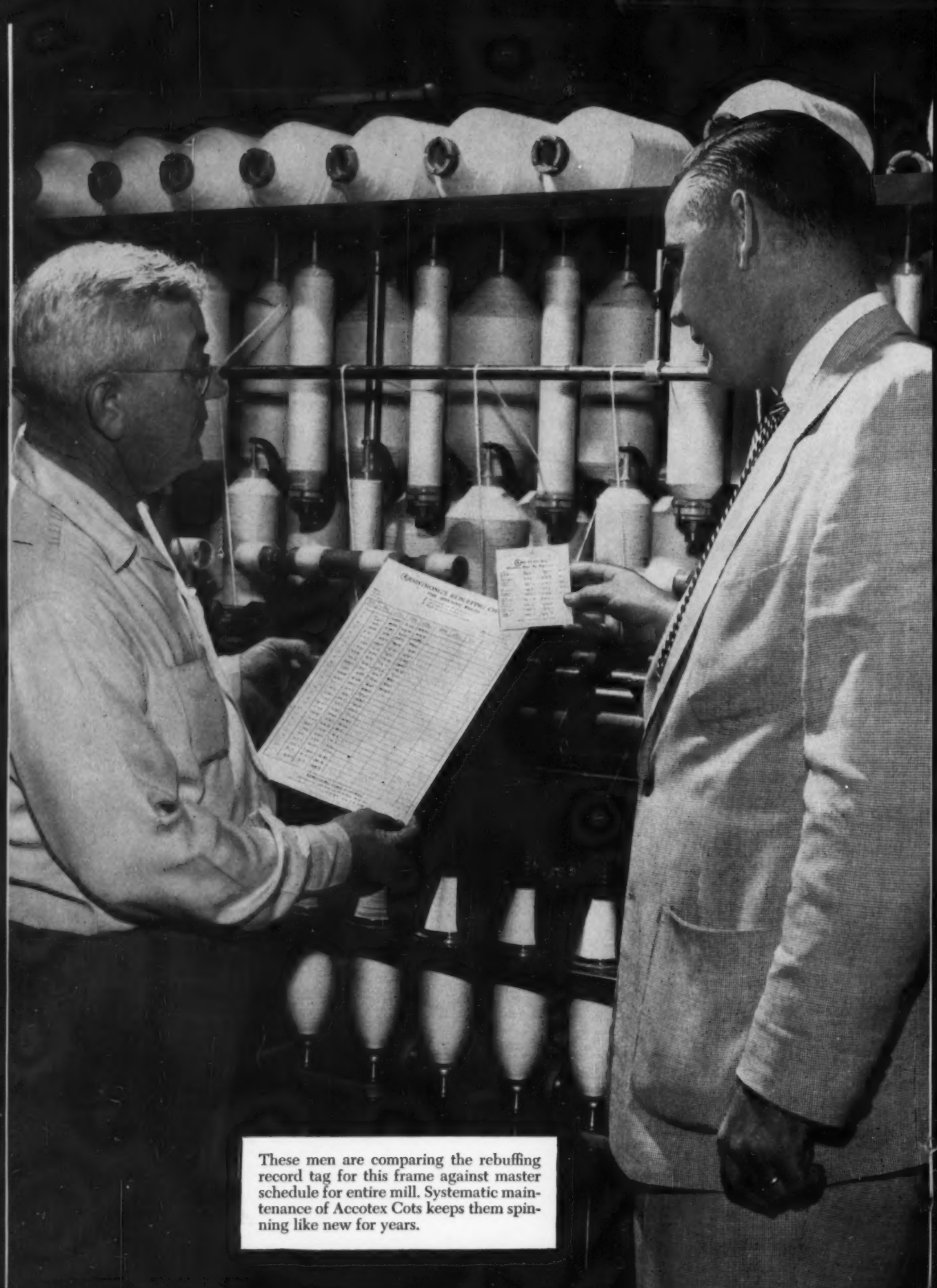


These men are comparing the rebuffing record tag for this frame against master schedule for entire mill. Systematic maintenance of Accotex Cots keeps them spinning like new for years.

Get maximum production of high-quality yarn . . . for years . . . with Armstrong Accotex Cots

The right spinning cot can make an important difference in helping you get the most out of your high-draft frames, both in terms of yarn quality and quantity.

That's why it pays dividends to select these cots carefully, to maintain them systematically . . . and to evaluate their performance regularly.

Many mills have found that they get the optimum combination of high yarn quality, trouble-free performance, and long service life by standardizing on Armstrong Accotex Cots. One big reason for this is that the broad Accotex line includes roll covers which are engineered to combat almost any spinning problem.

This means that no matter what fiber or blend you're spinning . . . no matter what type of equipment you're using . . . there's an Accotex Cot that's right . . . and proved right . . . for the job.

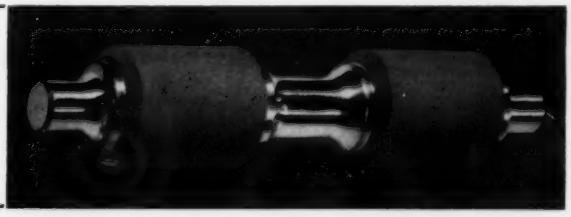
Accotex Cots are durable, too. Their tough synthetic rubber compounds resist "hollowing out" or grooving and are not affected by oils, dyes, or yarn-treating chemicals. In many cases, Accotex Cots give up to a year of three-shift service before they need to be rebuffed.

Because spinning cots are so important to yarn quality—and quantity—many mills find that a systematic cot maintenance program is well worthwhile. A regular rebuffing schedule can add years of like-new performance to roll covering life.

Your Armstrong man will be glad to help you select the right Accotex Cots for best performance in your mill. And he'll work with you to establish a regular schedule of cot maintenance. He'll also supply tags to record rebuffing schedules for individual frames as well as a master rebuffing chart for all the frames in your mill.

Ask your Armstrong representative about this the next time he calls, or write for more information to Armstrong Cork Company, Industrial Division, 6506 Ivy St., Lancaster, Pennsylvania.

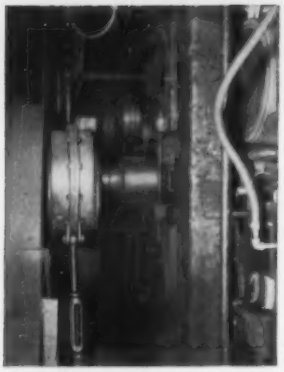
No matter what fiber or blend you're spinning, no matter what kind of equipment you have, there's an Armstrong Accotex Cot that's specially designed to help you get top-quality spinning.



Armstrong ACCOTEX COTS

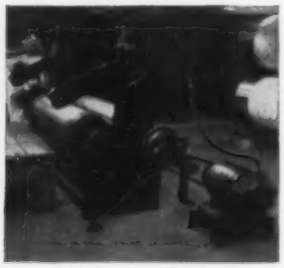
. . . used wherever performance counts

SAVE SPACE AND REDUCE COSTS . . . . .

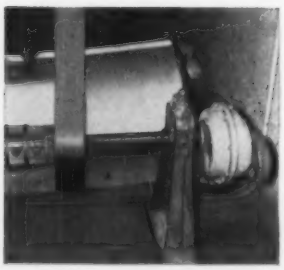


WATER MANGLE AND 20 DRY CANS are driven by 3 Lovejoy single-reduction shaft mounts in this highly compact installation. 10-hp. unit in foreground drives mangle at 4.80:1 ratio, 168 rpm. output speed. One of two 7.5-hp. units driving dry cans at 4.35:1 ratio, 87.5 shaft speed is seen in background.

That's What Mill Operators Say About Lovejoy Shaft Mounted Reducers



SEPARATE MOUNT IS NOT NEEDED, since this Lovejoy double-reduction unit mounts directly on drive shaft and is anchored on tie rod. It drives cloth winder from a 2-hp. dc. motor at 14.5:1 ratio.



KEEPING AISLES OPEN FOR TRAFFIC is critical at this dyehouse wash range. Compact 5-hp. Lovejoy shaft mount was selected to drive cloth winder. Shaft speed is 100 rpm., ratio 14.70:1.

These photographs, taken in typical Southern textile mills, show how Lovejoy Shaft Mounted Gear Reducers are used to achieve compactness, economy, and maintenance savings:

First, they provide a direct drive, eliminating shaft couplings and bulky supporting structures to save money, as well as space. Second, they reduce maintenance, because alignment is not required and belt tensioning is greatly simplified. Third, they are available in a wide range of models to provide the proper speed, horsepower and ratio most efficient for each particular operation—*and they cost less than other shaft mounted gear reducers.*

Lovejoy Shaft Mounted Gear Reducers are available from stock in 18 models—8 to 425 rpm., fractional to 120 hp. and 4.5:1 nominal ratio (single reduction), 14.7:1 nominal ratio (double reduction).

Request Catalog R-58. Give application data for specific recommendations from Lovejoy's engineering staff.

LOVEJOY FLEXIBLE COUPLING CO.

4850 WEST LAKE STREET • CHICAGO 44, ILLINOIS

PERSONAL NOTES

John P. Baum, vice-president and director of J. P. Stevens & Co., Inc., Milledgeville, Ga., has been elected president of Georgia Tech Foundation, an organization that raises funds for activities and support of the Georgia Institute of Technology. * * * **Joseph Hollis Sutherland** has retired as vice-chairman of J. P. Stevens & Co. His retirement marks the close of 50 years in the textile business, 30 of which were in the Stevens organization.

Ernest M. Boys has become manager of four textile mills in the Robert L. Stowe, Jr., group at Belmont, N. C. Mr. Boys' duties include supervision of activities at the Chronicle Mill, National Yarn Mill, Inc., Stowe Spinning Co., and Imperial Yarn Mill, all in Belmont. He was with Green River Mills, Inc., Tuxedo, N. C., for many years.

United Lace & Braid, Inc., Providence, R. I., has appointed **Curtis U. Coleman** technical director. He was formerly on the technical staff of Respro division of General Tire & Rubber Co.

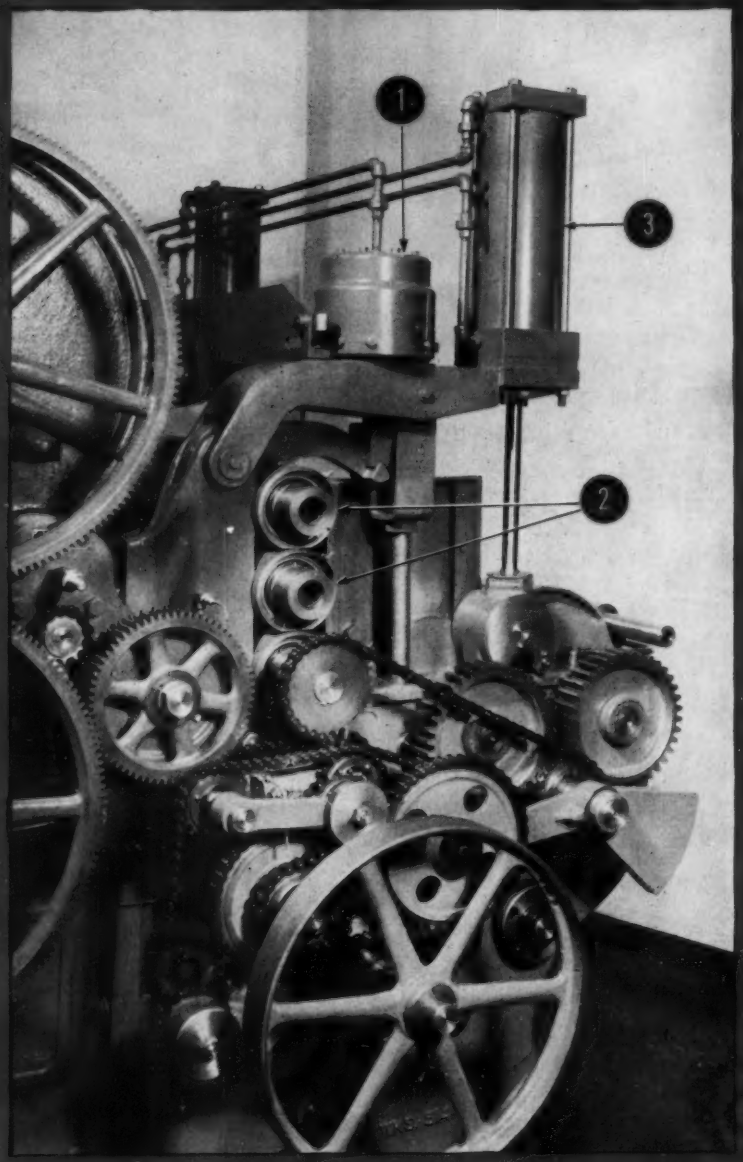
Robert B. Mitchell has accepted a position with the Pendleton Woolen Mills where he will be responsible for textile engineering activities in the company's mills located in Pendleton, Ore., and in Washougal, Wash. Mr. Mitchell was previously vice-president and a senior staff member of Barnes Textile Associates, Inc., a division of Scovell, Wellington & Co.

John S. Conway has become product manager of drapery fabrics at Judson Mills, Greenville, S. C. At the same time **W. H. Dean, Jr.,** was named product manager of synthetic fabrics, and **M. E. Wright** was promoted to product manager of cotton fabrics.

A $5,000 fund has been established at Lowell (Mass.) Technological Institute by **Barnett D. Gordon,** presi-

(Continued on page 48)

The ALDRICH HIGH COMPRESSION CALENDER



1 Diaphragm air cylinders, having neither pistons nor stuffing boxes, apply resilient pressure up to 12,000 pounds upon the calender rolls. Resilient pressure gives more uniform calendering, and protects the calender from shock loads. All pressure is released each time the calender stops, and is instantly applied when it starts.

2 Meehanite calender rolls, stronger and smoother than grey iron, are carried on roller bearings which fit standard roll necks. The special mountings for these bearings keep the rolls perfectly aligned at all times. This is very important where more than three times the usual pressure is applied to the rolls.

3 Air cylinders apply pressure directly to the top of each calender rack. Both calender racks are tied together with the usual cross shaft to prevent big-ended laps, which will not feed well on the cards.

The racks rise automatically when the calender stops for doffing, but are run down independently by the picker tender after the lap pin is threaded.

The chain drive replaces most of the gears and gives better control of drafts and quieter operation. Chains are oiled by automatic forced-feed system which also oils gears.

The elimination of the old drop-shaft gearing is particularly desirable. The drop-shaft is now mounted on self aligning ball bearings.

AldricH MachinE WorkS
Greenwood, South Carolina

No. 11 in a series—How your Du Pont salesman is backed by many sales-building activities, including Fiber Research, Technical Service, Fabric Development and Merchandising.

The man from Du Pont lends a hand in the cutting room

Meet George Bollinger (left) of Du Pont. He's a Technical Service Representative in our Fabrication Group. That's quite a title, and here's what it means . . .

George is one of a group specializing in developing the best techniques and materials for tailoring garments of our fibers. These men know cutting, sewing and garment finishing, just as other Du Pont Technical Service Representatives know knitting, weaving and fabric finishing. George (shown here with Louis Scalise, Vice President and head designer at Witty Bros., and head of Custom-Edition Clothes by Scalise) and his cohorts work with apparel manufacturers to help insure that the consumer gets all the performance advantages made possible by Du Pont fibers. Achieving true wash-and-wear performance has, of course, been a major project.

Last year, over 1,800 apparel manufacturers received Technical Information Bulletins from the Fabrication Group—and over 500 attended the Group's ten educational clinics.

What it all adds up to is this: Du Pont helps the manufacturer to produce garments that will sell and satisfy . . . and this helps our customers sell more fabrics made with Du Pont fibers.

From raw fibers to retail sales
. . . Du Pont helps build profits for you

PRODUCT and PROCESS NOTES FROM DU PONT

"Dacron"* Type 61 polyester staple is specifically designed for industrial uses requiring the physical and chemical properties of conventional "Dacron" Type 54 *plus high shrinkage.*

In the presence of hot air or hot water, "Dacron" Type 61 will shrink approximately 45%. This property makes it possible to produce non-woven felts of 100% "Dacron". "Dacron" Type 61 staple fibers are carded to form a batt which is needle-punched to interlock the fibers. This needled batt is then exposed to hot water or hot air to produce a felt.

Blended with wool in woven felts, "Dacron" Type 61 has sufficient shrinkage to permit it to ride and pack with wool during fulling and assists in closing and stabilizing the felt fabric.

Filtration, wicking, sealing, cushioning, spacing and lubrication are among the industrial uses for felts which benefit from the unique combination of properties possessed by "Dacron" Type 61.

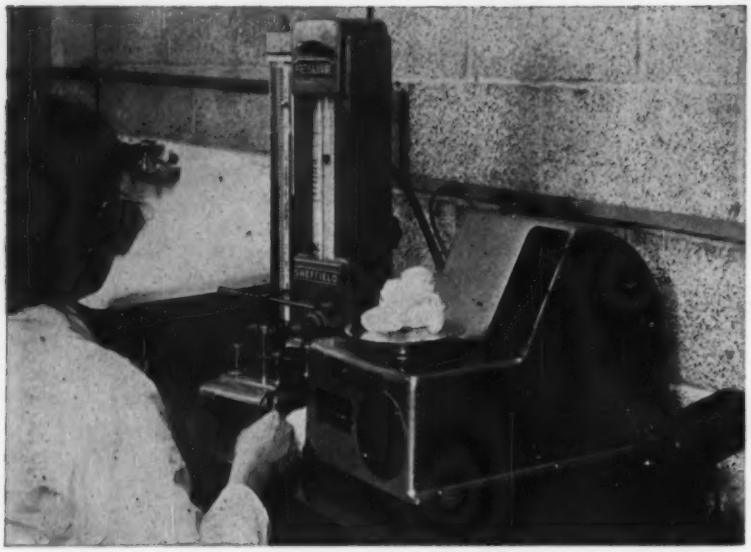
"Civona" rayon**—Your favorite lady's hat this summer may be made of "Civona", the latest addition to Du Pont's collection of rayon fashion yarns. "Civona" yarns are crisp, lofty and readily dyeable in a full range of seasonal colors. Currently available in only one count, 600-20 dull, "Civona" rayon is also being evaluated for use in draperies, casements, dresswear and toy-plush fabrics.

"Taslan"* textured yarn**—Several hundred new fabrics and garments utilizing "Taslan" textured yarns were shown recently to the press at a meeting in the Du Pont office in the Empire State Building. A number of the interesting items displayed were of foreign origin. Special attention was focused on the novelty yarns made possible by multi-end and variable-feed texturing. It was forecast that textured yarns of all types would grow to a 100-million-pound market by 1964, with "Taslan" accounting for about 25% of the total.

*Du Pont's registered trademark for its polyester fiber
**Du Pont's trademark for its hollow-filament rayon fashion yarn
***Du Pont's registered trademark designating textured yarns made in accordance with quality standards set by Du Pont

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

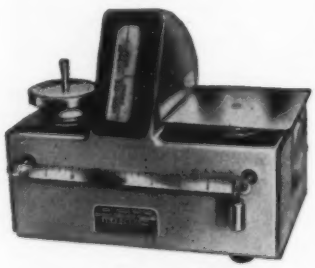


SHADOGRAPH® Scale assures accuracy in Micronaire test

Shadograph Model 4104-A, above, is precision designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Extreme accuracy, plus greater speed and easy-to-read indication make Shadograph the choice of cotton shippers, brokers and mill operators both here and abroad. The Shadograph's ultra-visible weight indication provides a sharp shadow-edge on an illuminated dial. Mechanical indicator friction is eliminated. Visible weight and accuracy are increased. Dial is graduated with 1 inch of indicator travel equal to 15 grains, over and under. Scale does not require leveling.

Write for Bulletin 3308

Other models of Exact Weight Scales are available for color control, slashing, sliver test, yarn count, quality control, denier testing and checkweighing operations.



MODEL 4204-B

Exact Weight SCALES

THE EXACT WEIGHT SCALE CO.
922 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: 5 Six Points Road, Toronto 18, Ont.

Sales and Service Coast to Coast

Find us in your local "Yellow Pages"

BETTER QUALITY CONTROL . . . . . BETTER COST CONTROL

PERSONAL NOTES

(from page 44)

dent of M.K.M. Hosiery Mills in Manchester, N. H. The fund is intended to provide an annual award of $250 for the freshman entering LTI who scores highest in the mathematics section of the scholastic aptitude test of the college entrance examination board.

Callaway Mills Co., LaGrange, Ga., has promoted **Elmer Durden** to assistant overseer carding, spinning,

Mr. Durden

Mr. Morris

twisting, and winding at the Elm City plant. * * * **James Oliver Morris** has assumed his duties as assistant overseer wool carding and spinning, Hillside plant.

Officers of Bonded Knit, Inc., a division of Wm. G. Leininger Knitting Co., Mohnton, Pa., are: president, **C. I. Ruth, Sr.;** treasurer, **W. L. Ruth;** secretary, **C. S. Reber;** vice-president in charge of purchasing, **M. K. Kauffman.** Superintendent of this seamless hosiery plant (the former Wyomissing Hosiery Mills) is **W. N. Schonour.**

Charles Lee Amos, Jr., has been elected president of Melrose Hosiery Mills, Inc., High Point, N. C. He succeeds his father, **Charles L. Amos,** who becomes board chairman.

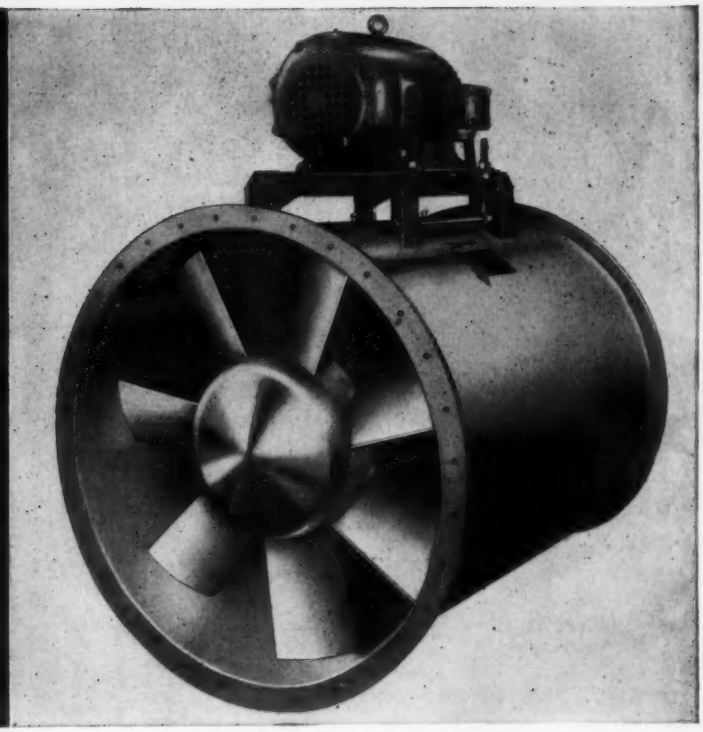
Metric Hosiery Co., Inc., New York City, has named **Seymour D. Werner** to the newly-created position of vice-president in charge of mill operations. **Robert Jackman** has become credit manager and secretary, filling the vacancy created by Mr. Werner's promotion.

M. Lowenstein & Sons, Inc., has appointed **Jack Pruitt** to direct operations of a fabric laboratory to be established in Anderson, S. C. Equipment will include six or eight looms for weaving new blends of material. The lab will also serve as a sample mill. * * * **Everett C. Drake**

(Continued on page 50)

Huge 96" Acid Fume Fan—210,000 cfm "Buffalo" Axial Flow Fan with cast aluminum wheel, installed in a textile mill.

In Stack Hood Exhaust — Easy installation is a big advantage of the duct-size "Buffalo" Axials mounted in these stacks. Hoods give all-weather protection.



FOR TOP AXIAL FLOW FAN EFFICIENCY— IN BIG JOBS OR SMALL—

SPECIFY "BUFFALO" AXIALS

"Buffalo" Axial Flow Fans provide extremely quiet and efficient performance. This inherent efficiency is further improved by the "Buffalo" Vaneaxial outlet guide vanes. These carefully engineered vanes re-direct the swirling air at the fan outlet, converting it into increased forward thrust.

These sturdy, reliable fans are light in weight, permitting easy installation. Except for the largest models, no structural support or heavy foundation are required. "Buffalo" Axials can be installed as a section of the duct or stack in hood and other roof exhaust systems.

Duct-size "Buffalo" Axials save space by fitting in close to walls or ceilings. Space-saving installations include service as ventilation, exhaust and industrial air conditioning supply fans. They are widely used for applications ranging from paint spray booth exhaust to boiler room cooling.

"Buffalo" Axial Flow Fans are available for high or low temperatures, corrosive fumes, explosive atmospheres and other severe conditions.

Investigate the many advantages offered by "Buffalo" Axial Flow Fans. Contact your nearby "Buffalo" engineering representative, or write direct for Bulletin 3533-EF.

"Buffalo"

BUFFALO FORGE COMPANY

175 Mortimer St. • Buffalo, N. Y.

Buffalo Pumps Division • Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

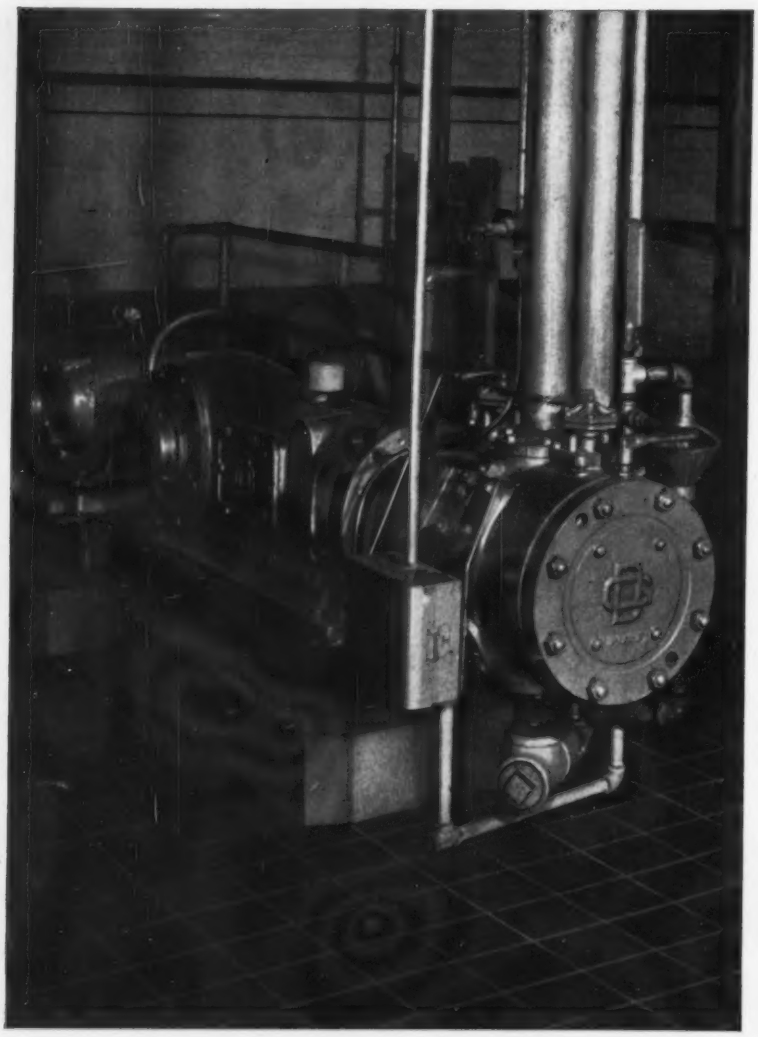
EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW

GARDNER DENVER

Pure, oil-free air that won't ruin delicate textiles or chemicals . . . won't clog sensitive control instruments . . . won't foul air-sprayed finishes. That's only one of the benefits when you install the CRX carbon piston air compressor. Carbon parts need no oil or water lubrication in the honed cylinder. Discharged air is pure and clean. Sizes from 100 to 1410 c.f.m. displacement. Write for Bulletin CRC-10. Ask about the smaller CACB oil-free compressor. Gardner-Denver Company, Quincy, Illinois.

No oil taint

...CRX carbon piston compressor



PERSONAL NOTES

(from page 48)

has succeeded **Donald B. Tansill** as president of the Lowenstein organization. Mr. Tansill moved up to chairman of the board, replacing **Leon Lowenstein** who has become executive chairman. **Robert Bendheim** and **Philip Feibusch** were named executive vice-presidents. **William H. Grier** has assumed the duties of president of Rock Hill Printing and Finishing Co. and Lyman Printing & Finishing Co., Inc., in South Carolina.

Thomas H. Fearrington has been appointed labor standards supervisor of the U. S. Rubber Co.'s Lastex plant, Gastonia, N. C. * * * **J. Edgar Clark** has been elevated to the position of second shift supervisor in

Mr. Fearrington

Mr. Clark

Asbeston winding and weaving at the Hogansville, Ga., plant. * * * **Raymond A. All** has been named to the newly-created post of director of marketing for the textile division. He headquarters in the firm's New York City offices.

George H. Turner has accepted a position as general overseer, carding, with the Gastonia, N. C., Combed Yarn division of Botany Cottons, Inc. He formerly held a similar position with Imperial Yarn Mills, Inc., Belmont, N. C.

The board of directors of the Inman (S. C.) Mills has named **John C. Bell** vice-president in charge of cotton purchasing. He formerly held the position of cotton buyer.

Jagger Brothers, Inc., Springvale, Me., has appointed **Leslie N. Athorn** head of the firm's quality control and research departments.

The new general manager of La France Industries, Inc.'s manufacturing facilities in South Carolina is **John A. Boland, Jr.** He has also been elected vice-president of the firm's production subsidiary, Pendleton

Manufacturing Co. Mr. Boland succeeds **Kendall T. Greenwood,** who continues as vice-president of the parent company and manager of the industrial division.

The Georgia Textile Manufacturers Association, Inc., (formerly Cotton Manufacturers Association of Georgia) has elected as president **Louis L. Jones,** president of Canton (Ga.) Cotton Mills. Other officers elected were: vice-president, **Paul K. McKenney, Jr.,** vice-president and comptroller of Swift Manufacturing Co., Columbus; and treasurer, **John P. Baum,** vice-president of the woolen and worsted division, J. P. Stevens & Co., Milledgeville.

Mr. Jones
GTMA, Inc.

Mr. Nields
NKOA

The National Knitted Outerwear Association has elected **James F. Nields, Jr.,** of Ware (Mass.) Knitters, Inc., president for the 1959-60 term. **John Miller** of Catalina, Inc., Los Angeles, Calif., was elected an NKOA vice-president, succeeding the late H. L. Whiting.

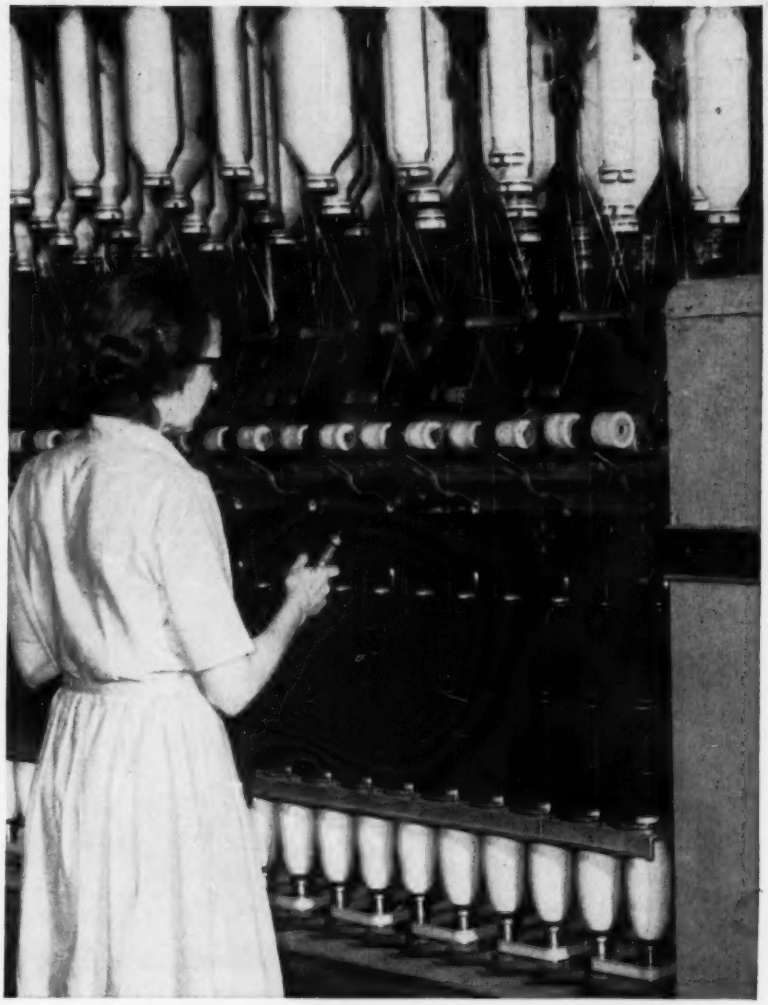
Waumbec Mills has appointed **Arthur M. Spiro** vice-president with responsibility for purchasing and sales of yarn, as well as co-ordination of fabric production with sales. He is located in the firm's New York City offices.

Mr. Spiro
Waumbec Mills

Mr. Bishop
Coats & Clark

A banquet was held honoring **John H. Bishop** on the occasion of his retirement as head of the Atlanta, Ga., stock regulation department headquarters of Coats & Clark, Inc. He began his career with J. & P. Coats, Ltd., in 1913.

(Continued on page 204)



End lint worries
the fast, low-cost way

Handy Gardner-Denver roll pickers—lightweight, inexpensive and air-powered—easily reach into tough, tight corners and crevices. They collect damaging lint more efficiently than hand-picking methods—or hand-powered rotating tools . . . save both time and material.

Cost-cutting design features include rotary-type air motor . . . cool running . . . instant start and stop . . . air exhausts out back of housing —won't blow lint into material being worked . . . built-in speed regulator . . . light weight—easy to manipulate. Ask your Gardner-Denver man for a demonstration or write for complete information.

EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW

GARDNER DENVER

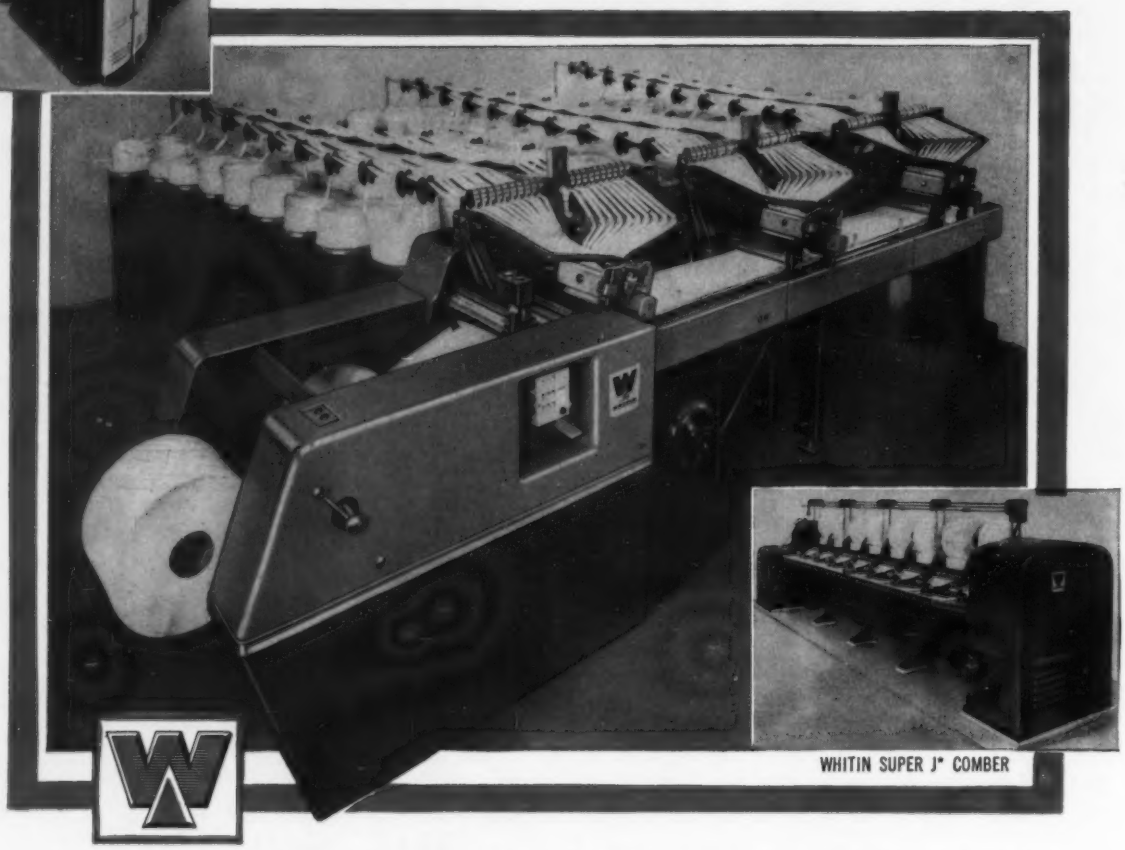
Gardner-Denver Company, Quincy, Illinois

Branch Offices: Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D.C.; Teterboro, N. J. (New York Office); Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.

The WHITIN SUPER J's New Running Mate-

the SUPER LAP machine

WHITIN
EVEN-DRAFT* DRAWING FRAME



WHITIN SUPER J* COMBER

The new Whitin Super Lap machine heralds a major advance in cotton processing. Running-mate to the famous Super J Comber, the Super Lap and the new Whitin Super Lap Preparation Method* hold promise of material savings in the making of combed yarns thru improving yarn quality, increasing Comber production and reducing Comber waste.

The Super Lap was specifically designed by Whitin Research engineers to implement a new concept in preparing Comber laps — the Whitin Super Lap Preparation Method — in which card sliver is first processed on the Even-Draft Drawing and then formed into laps by the Super Lap. This sequence of operations results in the superior lap in which all hooked and bent fibers have been straightened and made parallel — then on to the Super J Comber.

*(Pat. applied for)

Through this new method Whitin offers you these competitive advantages:

- **Lap production 500 lbs./hr. — 35 lb. laps from 60-end can feed.**
- **Up to 3% reduction in neils.**
- **Lap weights up to 1000 gr./yd. permit increased Comber production. (20-25%).**
- **Straightened and parallel fibers in lap afford easier combing.**
- **Recommended total draft 24-32.**
- **Improved yarn quality.**

For complete information see Whitin representative or write us direct.

WHITIN MACHINE WORKS

*TRADE MARK

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

NOW! A better permanent finish for Wash-and-Wears with Emulsifiable A-C® Polyethylene

As your fresh new designs for wash-and-wears come to life, give them the superior finish and enhanced end-use performance they deserve—with Emulsifiable A-C Polyethylene!

Synthetic fibers finished with A-C Polyethylene emulsions show excellent "hand," added abrasion resistance, increased tear strength and improved sewability . . . all at a *lower finishing cost*. With Emulsifiable A-C Polyethylene in your finishes, you gain all these important advantages:

* **Better permanent wash-and-wear finishes with a wide range of excellent "hand" properties**
* **Reduced needle cutting**
* **Greater resistance to creasing**
* **Increased seam strength**

Emulsions of A-C Polyethylene are equally effective with synthetic and natural fibers, or blends. Properly formulated, they do not retain chlorine, keep whites *white*, resist scorching at elevated temperatures, and do not affect dye shades or lightfastness properties.

Make A-C Polyethylene a part of your present finishing practice! Your textile chemical specialties emulsion supplier either has an A-C Polyethylene finish or can formulate one for your specific needs. (We are manufacturers of Emulsifiable A-C Polyethylene resin, not finishing emulsions.) Investigate this superior finishing agent *now*—your fabrics deserve it! Just write or telephone today for complete information.

Allied Chemical

SEMET-SOLVAY PETROCHEMICAL DIVISION
Dept. 554-AW 40 Rector Street
New York 6, N. Y.

What is YOUR Carding Problem?

It's not so much the BIG problems in the card room we're asking about. They're quickly recognized and get immediate attention.

But it's the pesky little ones . . . those that cause only occasional trouble. You're more apt to put them off "for a little while," and yet they are eating up useful production time.

It could be a little slippage on the roll,
or improper alignment of the teeth, due to jambs,
or points not properly ground,
or the need for a *special* clothing for synthetic fibres.

Little troubles can become BIG problems in time.

Check them *now*, with the help of a Tuffer Sales Engineer. He has the experience of over 90 years behind him—in both card clothing research and production.

Call or Write to Our Home Office
for Immediate Attention—No Obligation

TUFFER PRODUCTS

- Card Clothing for Woolen, Worsted, Cotton, Asbestos and Man-made Fibers
- Napper Clothing and Brushes
- Top Flats re-covered and extra sets loaned at all Plants
- Lickerins rewired at Southern Plants
- Hand Stripping Cards

HOWARD BROS.

WORCESTER 8, MASSACHUSETTS
Southern Plants: Atlanta, Ga., Gastonia, N. C., Greenville, S. C.
Direct Representation in Canada

A SKILLED HAND IN CHEMISTRY . . . AT WORK FOR YOU

NOPCO® 9092

. . . a new fulling and scouring surfactant that slashes detergent costs and scouring time

A new detergent from Nopco, 9092, offers textile manufacturers specific advantages for fulling and scouring operations:

1. Excellent Money Value . . . eliminates the need for adding additional detergent in the washer.

2. Excellent Rinsability . . . it rinses from the fabric easily, reducing the number of rinses required.

3. Ideally suited for continuous washing.

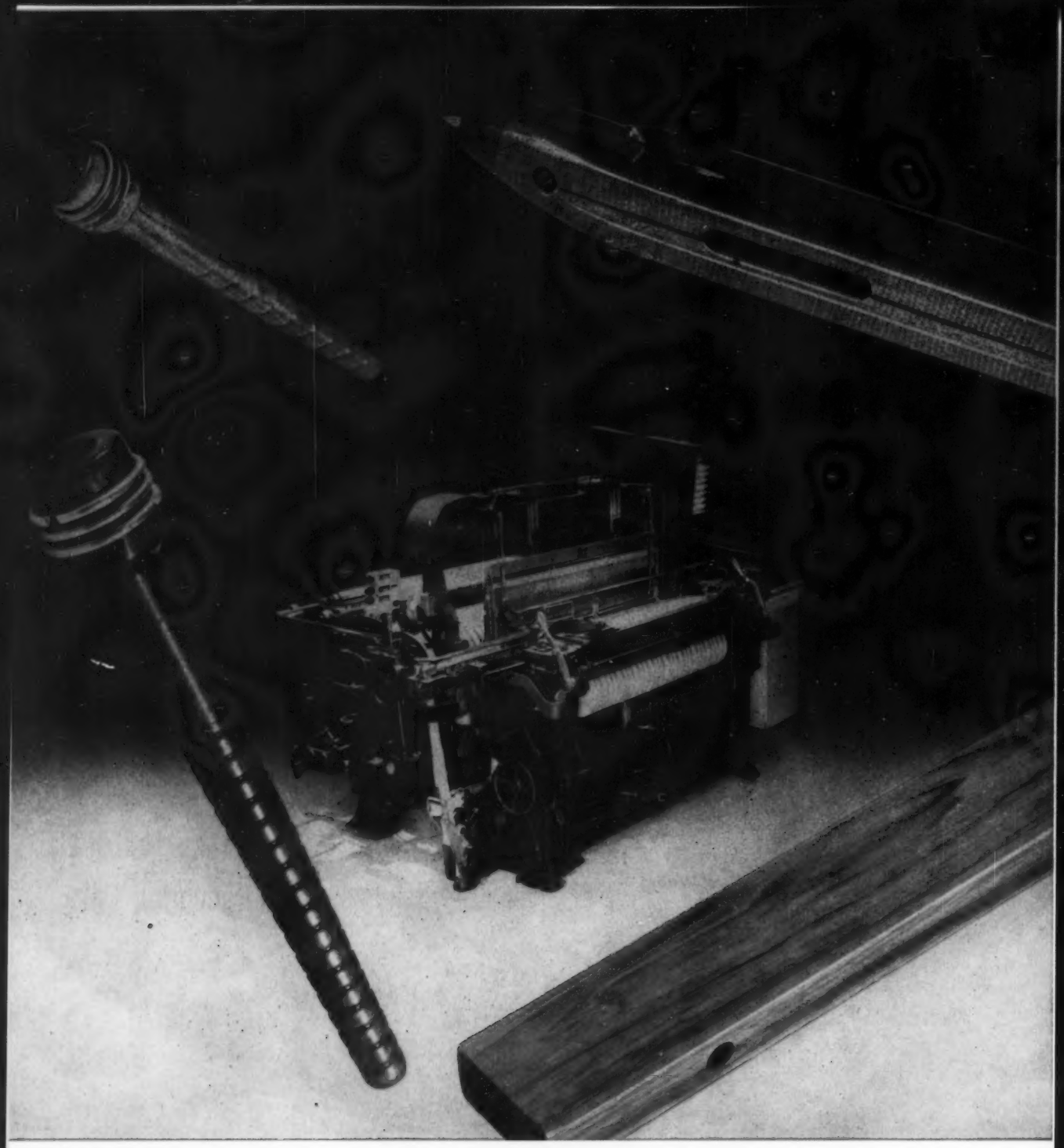
For further information write or call our Textile Technical Service Department

NOPCO®

NOPCO CHEMICAL COMPANY

60 Park Place, Newark, N.J.

Plants: Harrison, N.J. • Richmond, Calif. • Cedartown, Ga. • London, Canada



Planned for profit . . . Greater weave room efficiency and profit is more easily accomplished when Draper looms are backed by Draper accessories and **original** Draper repair parts. It's just good business sense to look to the **original** loom builder for quality in essential accessories and repairs. Every part bearing the Draper trademark reflects careful

development and extensive mill trial. For these reasons, Draper parts and accessories give the maximum in service and performance. Why take chances on misfits or mongrel designs? When you specify **original** Draper products you are protecting your profit picture.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.

1910

- **One type of rayon**
- **Two end products**

Back in the Nickelodeon Era rayon was rayon. It was produced in only one strength, one denier, one elongation. This early rayon was limited to use only in ribbon and hats.

1959

- **101 types of rayon**
- **Hundreds of end products**

Today wonderful new Avisco rayons go into all the products illustrated at right . . . and many more! And this is just the beginning. Spectacular new developments are near at hand!

AVISCO® RAYON . . .

Yes, in 1959 rayon is a far cry from the limited product of the early nineteen hundreds. In fact, rayon now represents a huge family of radically different fibers and filament yarns. Each member of this growing family is individually engineered for specific physical properties, mill operations and end uses. American Viscose was and continues to be the leader in gearing rayon to fit the needs of the day . . . and developing highly advanced fibers and filament yarns for the future.

YOU NAME IT! If it's rayon...American Viscose has it!

Every type of rayon staple and filament known can be made by American Viscose . . . the *only* producer you can use as a source for *all* your rayon requirements. And remember, Avisco people have the technical know-how to make virtually any type of fiber or filament a mill wants, with tailor-made packages for specific needs. You name it . . . if anyone can produce it, American Viscose technicians can!

a growing family of engineered fibers

Why do leading mills use AVISCO RAYON as the STANDARD OF CONTROL? Because statistical controls in manufacturing insure peak runability in all textile operations.

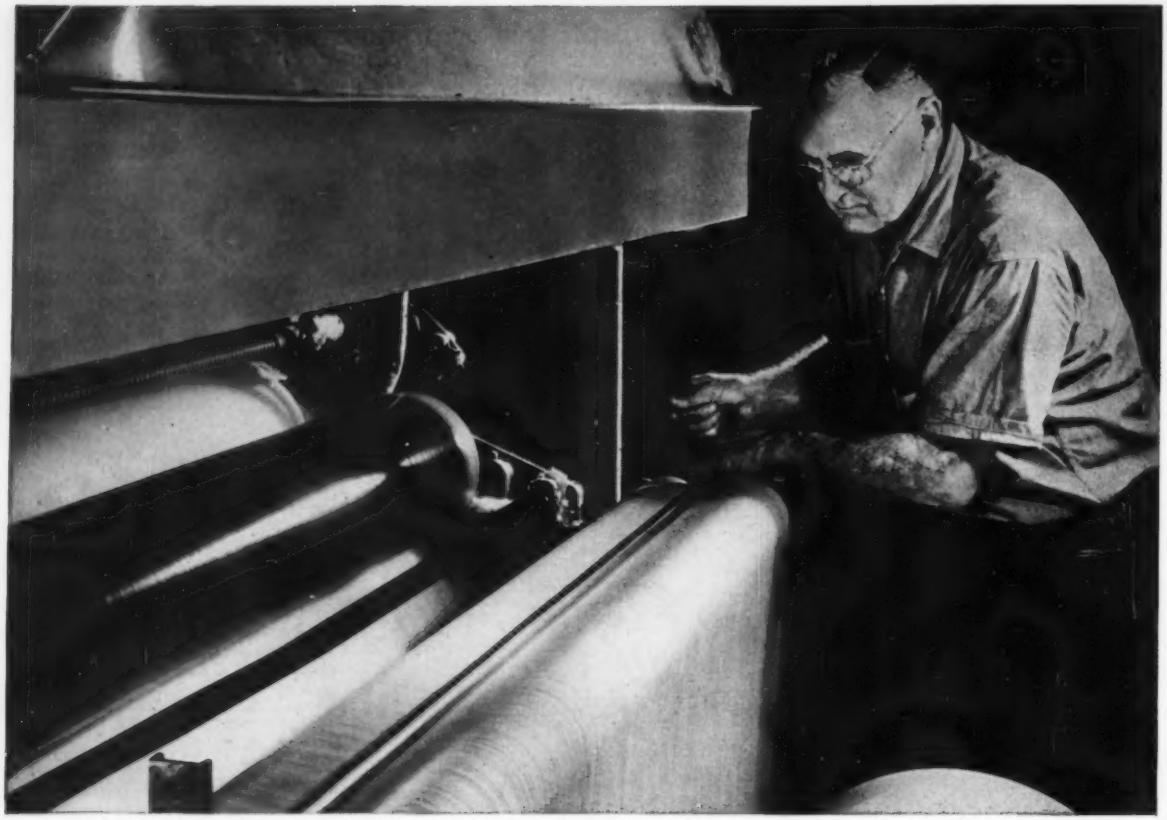
TECHNICAL SERVICE! Avisco Technical and Textile Service Department is the first and most highly respected rayon technical service in America. Experienced service engineers have at their fingertips full size operating mill machinery to give you advanced technical data and on-the-spot mill assistance. Always ready to serve you . . . as near as your telephone.

AVISCO

Look to **AVISCO**® for new ideas!

FIBERS AND FILMS

AMERICAN VISCOSE CORPORATION, 350 Fifth Avenue, New York 1, N.Y.



How Modern Mills Improve Slashing Operations

Time after time, mills around the country report greatly improved slashing operations with TEN-O-FILM starches. Compatible with most adjuncts and available in a wide range of fluidities, TEN-O-FILM users praise its many unique operating advantages.

TEN-O-FILM is ready to use after cooking thirty minutes. Many mills find need for less plasticizer than with conventional starches. The stability of TEN-O-FILM keeps size usable despite prolonged heating and cooling. Size made with TEN-O-FILM does not congeal or "skin over" at lower-than-normal temperatures . . . it can be held for reasonable shutdown period without gelation.

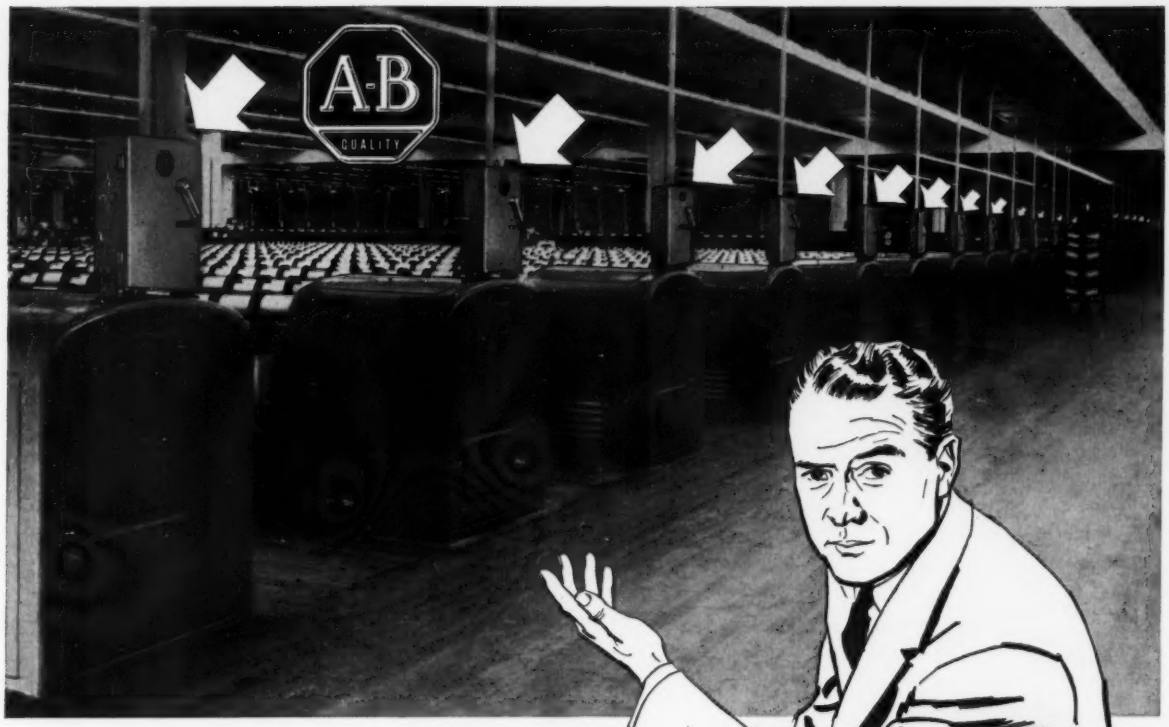
TEN-O-FILM offers several additional features including unequalled clarity of film, economy in desizing and dyeing.

Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Other fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® starches • GLOBE® and EXCELLO® dextrines

CORN PRODUCTS SALES COMPANY 17 BATTERY PLACE, NEW YORK 4, N.Y.



Production losses are "saved" when using

Trouble Free ALLEN-BRADLEY Motor Controls

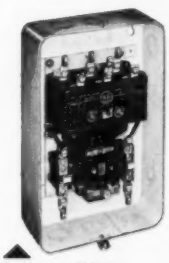
Costly production delays resulting from control failures are eliminated when you equip your mills with Allen-Bradley solenoid motor starters.

This simple solenoid design—for which Allen-Bradley starters are famous—has only ONE moving part. This assures millions of trouble free operations. There are no bearings to stick . . . no flexible jumpers to break. And the double break, silver alloy contacts *never* need service attention. Permanently accurate and reliable thermal overload relays protect motors against "burnouts."

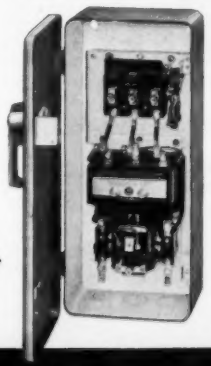
Insist on A-B quality motor control—it's your best insurance for maximum production economy.

Allen-Bradley Co., 208 W. Greenfield Ave., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

Bulletin 713 Combination Starter with circuit breaker as disconnect means.



Bulletin 709 Across-the-Line Solenoid Motor Starter.



Bulletin 712 Combination Starter with manual disconnect switch.

ALLEN-BRADLEY MEMBER OF NEMA

QUALITY MOTOR CONTROL

A view of the Barber-Colman display at the American Textile Machinery Exhibition in 1954. The machine in the foreground is drawing-in a complicated stripe pattern.

BARBER COLMAN

ATLANTIC CITY, N. J.
MAY 23-27, 1960

It is not too early to plan...

Less than a year from now, the next great American Textile Machinery Exhibition will take place at Atlantic City, in the same huge Auditorium which has housed it on two previous occasions. *It is not too early now for you to start planning to be there.* Barber-Colman will, of course, be among the exhibitors — with operating examples of all the latest and most interesting models of Barber-Colman machines. You will find machines here that can improve the quality of your products, increase the efficiency of your manufacturing methods, and reduce your operating costs by significant amounts. You will have a chance to see these machines in actual operation demonstrating their capabilities on the yarns and goods for which they are designed. You will have a chance to talk with experienced men, who can discuss in detail the possible uses of Barber-Colman machines in your own mill. You will have a chance to ascertain the advantages and calculate the comparative costs of the new Barber-Colman ideas against your present methods. These valuable opportunities are planned for *your* benefit—so, start to plan *now* on being at Atlantic City next May.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F. Mexico	Industria e Comercio de Maquinas S. A. "COMASA" R. Glicerio, 537/547 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-Machi, 3-Chome, Higashi-Ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr) Ltd. 730, Muhammadi House, McLeod Road Karachi 2, Pakistan

HOW TO SOLVE YOUR FINISHING PROBLEMS...

Whether a finishing problem is big or little, its solution requires a combination of expert technical service and exactly the right products. And this is precisely the problem-solving combination you get when you deal with the Textile Finishes Department of Procter & Gamble. P & G offers you unsurpassed experience in solving finishing problems that require fatty based finishes and softeners, and in developing and manufacturing the needed soaps and detergents.

If you are interested in eliminating finishing difficulties and improving your processing and results, be sure to have the Procter & Gamble Textile Finishes experts evaluate your situation — without cost or obligation on your part. The data you receive will be based on *your* fabrics, *your* finishing procedures . . . and whatever other special materials or conditions are involved in *your* problems. And this expert analysis will be backed up by a specialized product or products selected from the many developed in the famous P&G laboratories.

For all the facts call the P&G Textile Representative nearest you. Or, if you prefer, write to Textile Finishes Section, Procter & Gamble, Industrial Specialty Sales Department, Cincinnati 1, Ohio.

New! PROXOFT-N

If you are a finisher of "wash and wear" fabrics, you should try PROXOFT-N, Procter & Gamble's remarkable new textile finish. You'll like PROXOFT-N's compatability with other finishing chemicals. You'll like its lubricating properties that so greatly minimize sewing and cutting problems. And because PROXOFT-N doesn't retain chlorine, is scorch-resistant and stable, fabrics are left as white as they were before finish was applied. To get more facts on PROXOFT-N, call the Procter & Gamble Textile representative at the P&G office nearest you.

PROCTER & GAMBLE

The **PROCTER & GAMBLE** Company • **TEXTILE FINISHES** Dept., Cincinnati 1, Ohio

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DOW | **Chemicals**

make textile news and profits

To report in detail all developments in all fields of chemistry that affect the textile industry would require a good sized press, running day and night. Here you find highlighted a few developments, new and old, about seven chemicals that play a part in the quality or production costs of textiles. Other facts and other chemicals will be covered in subsequent advertisements in this series. To keep in the know, keep tab on both pages of this and following ads.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

ROUTE TO:

_____

_____

_____

_____

_____

PLAQUEMINE . . . 5+9= BETTER CAUSTIC SODA SERVICE

Completed only last October, the plant at Plaquemine, Louisiana, is already giving textile men (who realize the importance of assured source of supply) reason to double-check their present sources.

Using ultra-modern equipment and methods, this multimillion dollar installation brings to five the number of caustic soda production plants operated by The Dow Chemical Company. With the nine Dow shipping terminals, it brings to fourteen the number of points from which top quality caustic is available for immediate delivery.

The advantages to textile men are many, both now and in the future.

In the last two years, quiet plantation land along the Mississippi River, thirty miles north of New Orleans, has been changed to a teeming spic-and-span industrial center where caustic soda and other vital chemicals are produced with modern efficiency and precision.

Dow cordially invites members of the textile industry to pay a call at Plaquemine and personally view this new source for many important textile chemicals. The effective use of natural resources appeals to the efficiency-minded: natural gas, piped from nearby fields, furnishes fuel for power and heat; water for cooling and processing is readily available from the Mississippi as it flows by the door. It is something worth witnessing: every requirement for efficient production of the finest caustic soda is concentrated here in one plant.

Textile management: the long view. A poll of men in textile mills, both large and small, will make these things clear:

- A dependable shipping source for caustic soda is important for efficient inventory control and economical manufacture.
- A dependable manufacturing source for top quality caustic soda is essential for long range planning. Regardless of what may develop nationally or internationally, a *sure* supply is necessary.

With five production plants—located in Michigan, Texas, California, Ontario and now Louisiana—Dow provides the best possible answer to the question of assured supply. And Dow's nine shipping terminals—each completely stocked and staffed for fast delivery—furnish a time-tested solution to the problem of dependable delivery.

In planning ahead, the textile executive finds there is another important consideration: Dow is widely accepted as the reliable source of supply for caustic soda in every form—50% and 73% solution, standard flake, solid and ground forms.

New basic guide for NaOH buyers. The comprehensive Dow Caustic Soda Handbook discusses properties of

The new Dow plant in Plaquemine, La., produces quality caustic soda, used by textile mills for kiering, for bleaching and mercerizing, for changing the "hand" or feel and producing a sheer finish.

NaOH, its uses, forms, shipping and handling data, and methods of analysis. Everyone in the textile industry connected with the use of this basic chemical should have a copy. Ask your Dow sales representative for your copy, or write Dow.

• Boon to cotton fabricators

Even whites resist wrinkles with EDA 98%

The latest improvement in ethylenediamine resins enables mills to fabricate cottons in pastel colors, even white, so they are not only wrinkle-resistant, but have excellent wrinkle recovery properties. Higher color retention in the finished fabrics, along with improved dimensional and storage stability, may also be obtained using EDA-derivatives.

The product that makes this possible is EDA 98%, pioneered by The Dow Chemical Company. Its quality and purity surpass anything previously achieved, making it the ideal base for ethylenediamine resins used in treating finished cotton. So pure, you can look through a bottle of EDA 98% almost as easily as through a plate glass window. This purity pays off with any cotton fabric but especially light colored or white fabric where true, pure tones are required for the important high style market which includes dress shirts, blouses, summer dresses and skirts.

The greatly improved resins from high quality EDA, the result of years of extensive research in the Dow laboratories, are attracting the attention of foremost cotton fabricators both in this country and abroad.

• Dowicide G . . .

Textiles get an assist from chemistry

The preservation of starch solutions used by textile mills for warp sizing took a long step forward with the discovery of Dowicide® G, one of a family of industrial preservatives developed for the control of bacteria and fungi. Dowicide G (technical sodium pentachlorophenate) added to starch sizing prevents breakdown in vats and stops mildew damage in gray goods. By eliminating mildew, this modern preservative marks up a double savings. It saves fabricating time. And it saves the extra costs created by increased bleaching that's caused by mildew damage. Dowicide preservatives also effect important savings by preventing mildew and rot in carpet yarns; resisting rot in rope and bale twine and coated burlap; as well as preservation of cotton, rayon and silk yarn. Dow has experience-in-depth with each of these applications—you are invited to write for detailed information on your particular problem.

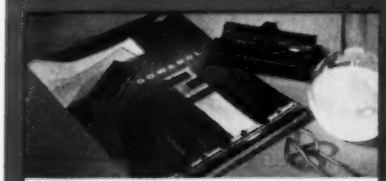
★ ★ ★ ★

LEARN MORE ABOUT CHEMICALS that are advancing textile production, reducing production costs. Dow is an authoritative source for information about textile chemicals as well as a reliable source for the chemicals themselves. Write THE DOW CHEMICAL COMPANY, Midland, Mich., Chemicals Sales Dept. 981FZ6.

Dowicide preservatives help prevent damage in goods subject to mildew and rot.

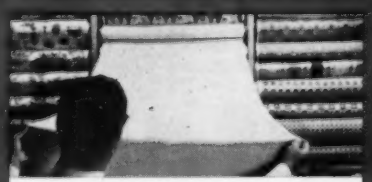
NEWSWORTHY NOTES

on other chemicals of interest to the textile industry



DOWANOL. Latest information about the most complete line of glycol ether solvents for dyeing is in a free folder and booklet on Dowanol® products.

GLYCOLS. Mono-, di- and triethylene glycol are three industrial glycols proved outstanding as fiber lubricants and as snagging or drying preventatives.



CHELATING AGENTS. Textile men use Dow triethanolamine to reduce iron staining; Versene®, Versenol® and Versenex* for other cost-cutting applications.

*TRADEMARK

DOW LATEX. In many applications, from carpet backing to hair-pad binding, Dow Latexes are cutting costs and providing improved product features.

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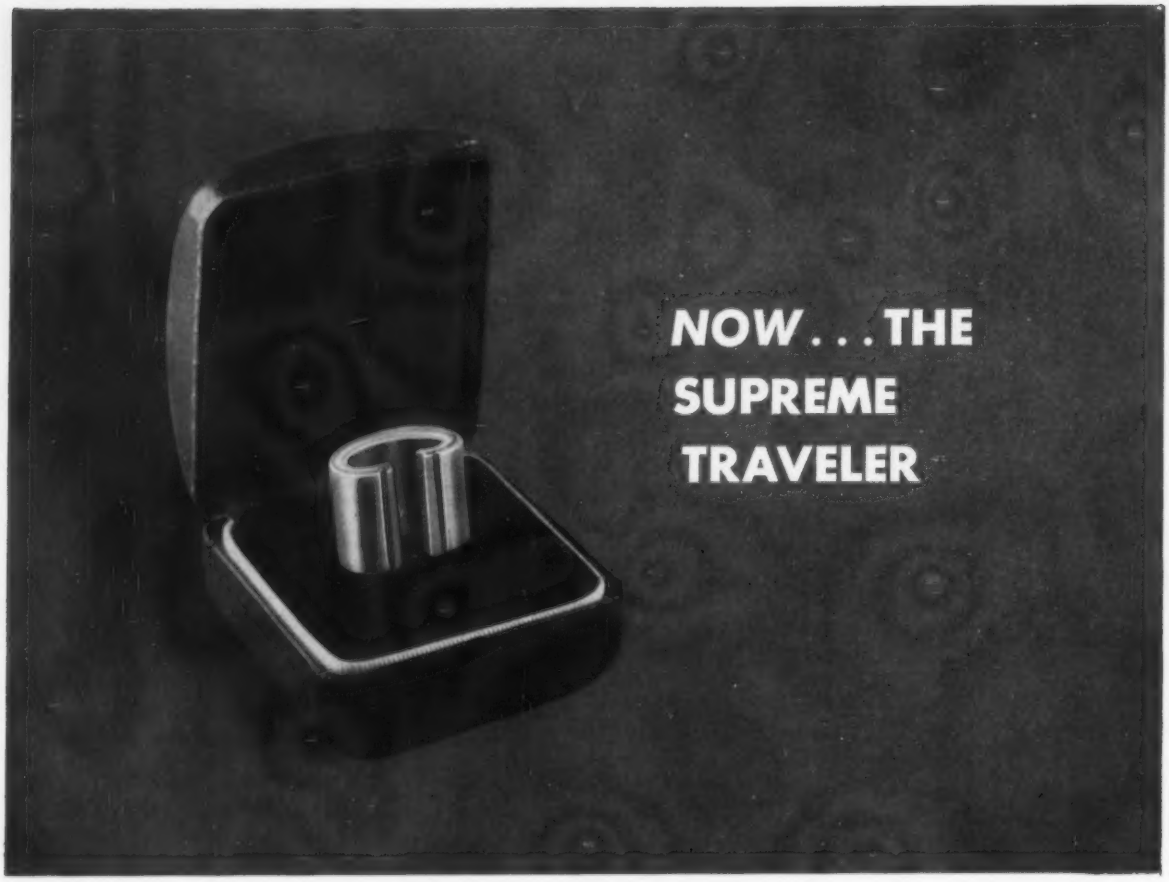

Superior Performance to match its name!

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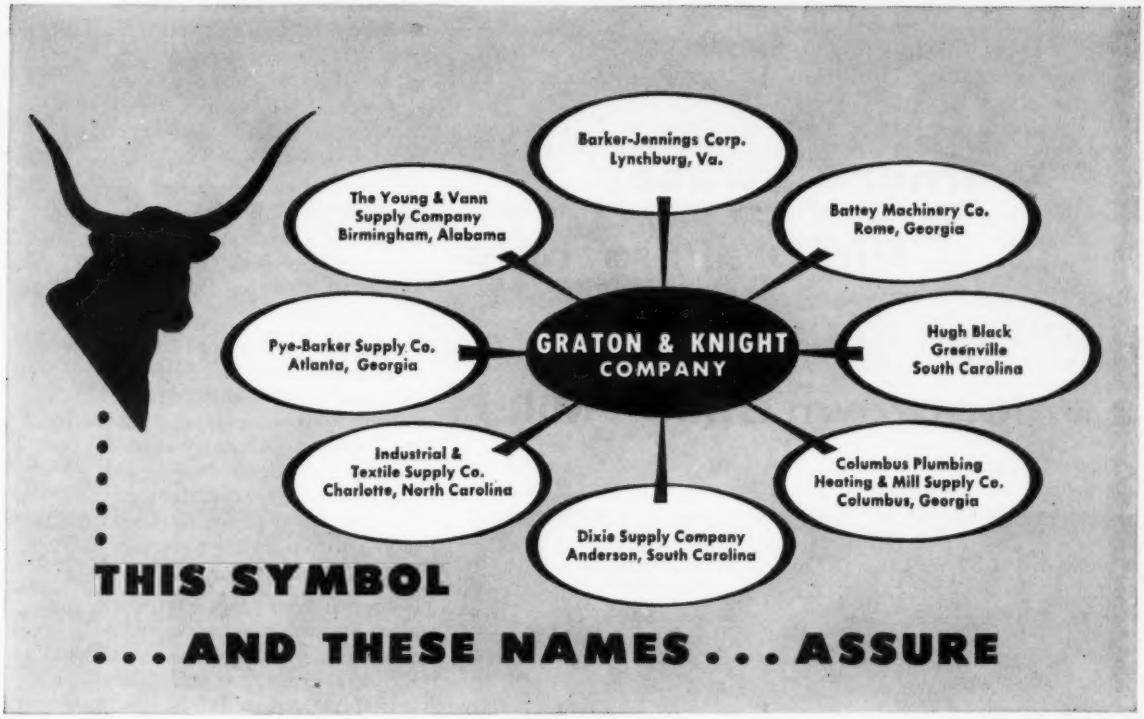

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● Four years ago, Crown Cotton Mills of Dalton, Georgia, began the gradual installation of a modified worsted system. Today, it processes over 65,000 pounds of tufted carpet yarns each week.

At the start of their tufted yarn operation, only one dual delivery Pin Drafter was used. As demand for the yarn improved, additional Pin Drafter Intersecting Draw Frames were installed.

Crown's latest acquisition—two single head, high-speed dual delivery and one dual head, high-speed quad delivery units—is increasing production and providing a more balanced operation—without requiring any additional floor space. Blending at the Pin Drafters has been improved and their entire drawing room has become much more flexible.

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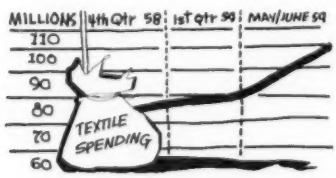
NEWS IN BRIEF

See Rosy Textile Future. Retail sales of textile products will continue to rise for the rest of the year, reflecting cyclical influences, predicts *Value Line Investment Survey*. Low inventories should let textile manufacturers benefit

from the increasing demand, so that substantial gains in sales and earnings are in the cards for 1959. Higher volume and wider profit margins should be possible for the next three to five years, the *Survey* concludes.

Textile Spending Increases. Outlays for new plant and equipment by the textile industry reached about $89 million in the first quarter of 1959, rising from $80



million in the final quarter of last year. A further increase to $109 million is expected for the April-June, 1959, quarter, according to the U S. Department of Commerce estimate.

Arbitration Consolidated. Effective the first of last month, the Arbitration Bureau of the old National Federation of Textiles, operated for the past year by the American Cotton Manufacturers Institute, has become affiliated with the General Arbitration Council of the Textile Industry. The affiliation brings the arbitration facilities of all branches of the textile industry into a single organization.

Georgia Mill Men Have New Name. Members of the Cotton Manufacturers Association of Georgia voted at their recent annual meeting to change the name

of the group to Georgia Textile Manufacturers Association, Inc. The previous name was adopted in 1912. Members also approved a move to incorporate the new association. The Georgia group was the last of the four southern textile associations to drop "cotton" from its official name.

Kent Scores European Wool Men. Commenting on foreign displeasure with President Eisenhower's proclamation continuing the U. S. tariff-rate quota on imported wool fabrics, William I. Kent, president of National Association of Wool Manufacturers,

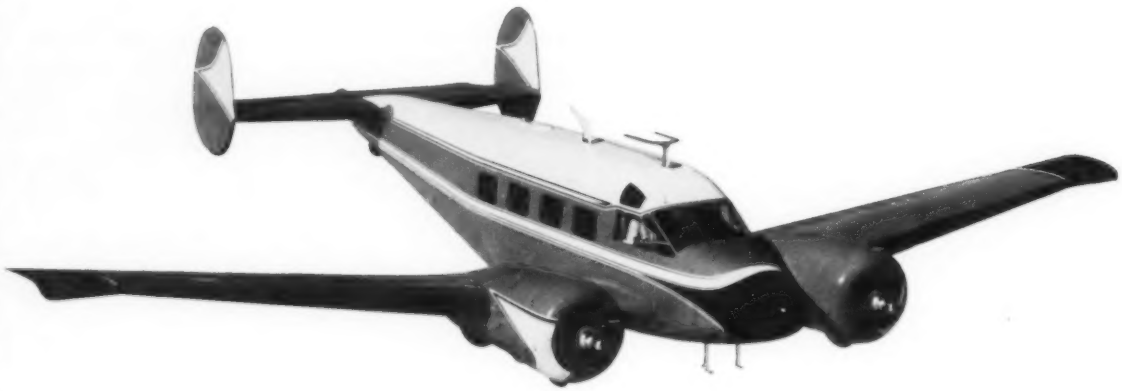
said, "The sharp criticism already voiced by the British, French and others again proves that no matter what concessions are made to them by the U. S., they want still more."

Synthetics from Japan Jump 400%. There was a four-fold increase in the poundage of synthetic piece goods imported from Japan from 1957 to 1958, reports *Textile Organon*. The figures: 661,000 pounds in 1957, 2,480,000 pounds in 1958. At the same time, imports of man-made fiber fabrics from other countries decreased 8%. Most significant, notes the *Organon*, is the fact that the average value decreased from $1.28 to 78¢ per pound.

More Realistic Depreciation Unlikely. Internal Revenue Service officials say it's unlikely that anything will come of the two-year-

old project to revise the Service's Bulletin F, unofficial guide to the estimated "useful life" of machinery and other capital goods. IRS men fear that revision of the Bulletin would give it official status, so they oppose any changes. Tax men also point out that a new Treasury policy defines "useful life" as the period over which an asset is useful to a *single* owner, and that its over-all life is often with more than one owner.

Beechcraft SUPER 18



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BEECHCRAFT — AIRFLEET OF THE TEXTILE INDUSTRY

Army Tries Paper Tents. The Quartermaster General reported recently that the Army is experimenting with paper and plastic

tents so compact that they can be folded up by a recruit in a few minutes into a package no bigger than a suitcase.

Japanese to Start Salvador Mill. Japan's Kureha Cotton Spinning Co. Ltd. has announced plans for a dyeing and finishing plant to be built in El Salvador in connection with Industrial Unidas, the mills

jointly owned by Kureha and the firm of Andres Molins. The plant is expected to go into operation by the end of July, and will be the first fully integrated cotton operation to be set up abroad by a Japanese mill.

Canadian Cotton Mills Had Bad Year. The annual statement of the Cotton Institute of Canada reports bad news across the board for Canada's cotton mills in 1958. Domestic shipments decreased (to 245 million yards from 264 million in 1957), portion of the Canadian market supplied by domestic mills dropped (from 48% to 45%), employment was down (from 19,700 in fourth-quarter 1957 to 19,000 for the same period of 1958), and cotton bale openings fell (from 371,000 to 337,000). Biggest worry of the Canadian industry is U. S. cotton cloth; shipments rose from 219 million yards in 1957 to 227 million in 1958, bringing increased pressure on Parliament for stronger enforcement of antidumping measures introduced last year.

USSR Buys Equipment in West Europe. About 40 contracts, worth almost $300 million, have been placed by a Russian trade delegation with Western European manufacturers of machinery for the textile, chemical, and plastics industries. Sharing the contracts were firms in England, Germany, Italy, and France. The bulk of the orders are said to be for equipment to produce man-made fibers.

More Resistant Cottons. A method for producing cotton fabrics with improved rot and weather resistance has been announced by the U. S. Department of Agriculture. The method is based on a water-soluble acid colloid of methylolmelamine, a resin-forming chemical. In soil-burial tests, untreated cotton was in shreds after one week; treated cotton retained 100% of its strength after 21 weeks. Developed at USDA's Southern Utilization Research and Development Division, the treatment can be used with certain pigments to increase cotton's resistance to deterioration by sunshine.

Golden Fleece Awards. Golden Fleece awards, presented annually by the National Association of Wool Manufacturers to outstanding personalities for achievement in their chosen fields, were given this year to Geraldine Stutz, president of Henri Bendel, Inc., New York specialty store; Elmer Ward, Sr., president, Palm Beach Co.; and Maurice S. Handler, Smart-Maid Coat & Suit Corp. C. M. Bishop, president of Pendleton Woolen Mills, received a special award, the NAWM silver medallion, for his many years of promoting woolen interests.

Textile Starting Salaries Up. That starting salaries of textile school graduates are getting closer to those offered by other industries was the consensus of edu-

cators attending the recent meeting of the National Council for Textile Education. Although no reliable average can be given, it was noted that many companies have offered $450 per month recently to

Labor-Management News

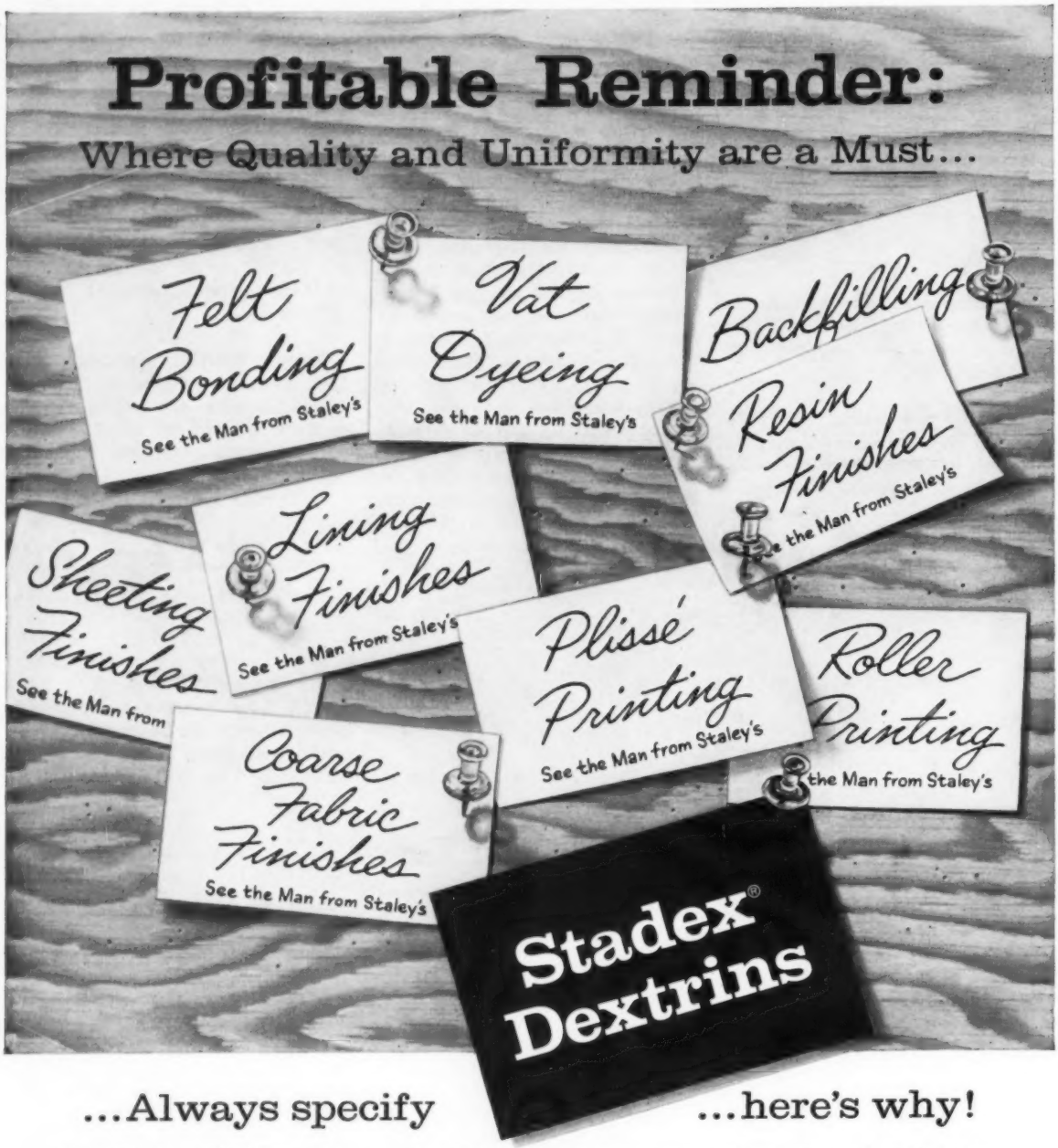
Knit Firm Rejects Union. Employees at Wonderknit Corp., Galax, Va., voted against union representation in a recent NLRB-conducted election. The vote: no union, 290; International Ladies Garment Workers Union, 57; Virginia Textile Workers Union, 32.

NLRB Cases at New High. Annual report for 1958 recently submitted to Congress by the National Labor Relations Board shows a new high in number of cases filed

(16,748), new low in percentage of cases won by labor organizations (61%, compared with 62% in 1957 and 65% in 1956), and a new high in number of unfair-practice charges filed (9,260).

New Union Pacts. Plants recently signing up with Textile Workers Union of America include Taunton (Mass.) Dye & Print Works, Inc., with 150 employees, and Vaucanson Silk Mills, Port Jervis, N. Y., also with 150 workers.

New Contracts. Berkshire Hathaway, Inc., and Textile Workers Union of America have agreed on a new three-year contract with a 7% general wage increase, averaging 10 cents an hour; a $1.25 per hour minimum wage; and two annual wage reopenings. The contract covers seven mills in Massachusetts and Rhode Island. * * * The 176 members of TWUA at Victor Balata & Textile Belting Co., Easton, Pa., receive pay increases averaging 12.7 cents per hour in an agreement between the company and the union.



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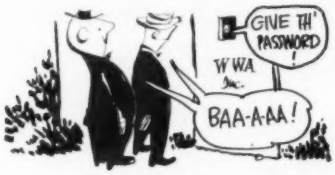
new graduates, while beginning salaries of $500 and more have been reported. Some mills still expect to hire graduates at under $400 a month, but several schools report no applicants for these jobs.

Wool Group Admits Suppliers. Woolens and Worsteds of America, Inc., sheep-to-mill promotional group, has established two new classes of associate membership. The first covers manufacturers



and suppliers of machinery, dyes, chemicals, and other products used by wool mills; the second is made up of commission spinners, weavers, dyers, finishers, and sales agents.

PTI Broadens Curriculum. Development of a "dynamic executive-level educational program," along with expanded research for industry, will be stressed by the

Philadelphia Textile Institute in the coming decade, according to Bertrand W. Hayward, president of the college. A degree course in marketing and management is now being offered, while all courses have been strengthened with arts and science subjects to assure students of a more nearly complete, well-rounded education.

Few Choose Cotton "B" Plan. An unexpectedly small number of farmers—68,559—chose "Plan B;" which will permit them to plant up to 40% more cotton than their

regular quota under "Plan A." This will increase cotton acreage eligible for price support by only 6.3%, to a total of 17,333,529 acres. Farmers choosing Plan B are eligible for price support at 65% of parity; those choosing Plan A can sell their cotton to Uncle Sam at 80% of parity.

Reds Are Specialized. A European correspondent notes that it seems to be Communist policy to concentrate on national specialties in textile supplies and equipment. East Germany makes textile machinery; Hungary makes textile testing equipment; Czechoslovakia concentrates on hosiery machinery; and so on.

To Expand Spinning Plant. Plains Cotton Growers, Lubbock, Tex., have voted to provide up to $45,000 to underwrite part of the cost of expansion of the pilot spinning facilities for cotton research at Texas Tech.

Los Angeles Still Trying. The Mayor's Committee for the Development of the Textile and Apparel Industry, a group dedicated to attracting textile mills to the Los Angeles area, has commissioned a followup study on the subject. The original survey [TEXTILE INDUSTRIES for November, 1957, p. 87] "definitely indicated the economic feasibility of primary textile mills locating in the Los Angeles area," but apparently no new mills have been established there as a result of it.

Vinyl Shipments Down. Shipments of vinyl coated fabrics showed a decline in 1958 of about 17 per cent from the peak year of 1957, according to Vinyl Fabrics Institute; volume was the lowest since 1954. A total of 76.9 million linear yards was shipped.

Suggestion System Aids Available. National Association of Suggestion Systems has developed a packet of various suggestion plan studies developed by its member companies, including techniques on awards, evaluation, promotion, and "how to do it." A limited supply of the packets is available to nonmembers firms at no charge. Write NASS at 25 E. Jackson Blvd., Chicago 4, Ill.

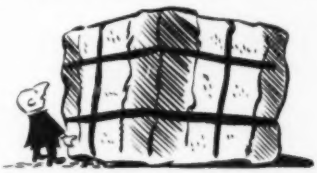
Fewer Textile Failures. There were 18 business failures among textile manufacturers in the first quarter of 1959, according to Dun & Bradstreet, Inc. These unsuc-

cessful mills had liabilities of $1,801,000. The figures compare with 25 failures and liabilities of $3,079,000 for the similar period of 1958.

Wool Prices to Rise? Look for a moderate rise in wool prices this year—that's the word from J. R. Williston & Beane, stock brokers. There may be moderate drops be-

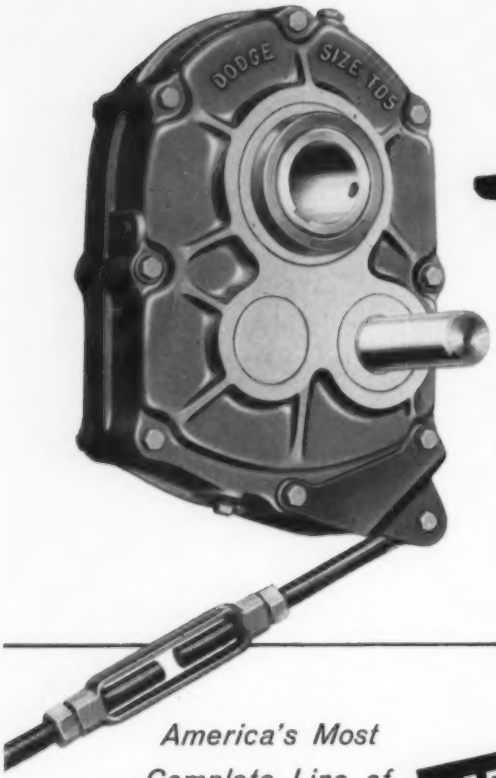
low current contract prices, but steadily advancing prices are possible, says the firm. The prediction is based on the cyclical nature of wool use.

USDA Has a Lot of Cotton. U S. Department of Agriculture reports that 6,199,766 bales of 1958-cotton had been pledged for loans



as of January 23, and that 97,311 bales had been redeemed. All bales which have not been redeemed by July 31 will be purchased by Commodity Credit Corp.

Porous Fabrics Coming. Formation of a jointly owned corporation for the development of porous and microporous plastic materials suitable for wearing apparel and other uses has been announced by Reeves Brothers, Inc., and Electric



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Dodge design provides wide spacing for the bearings. Loads are carried easily, contributing to Torque-Arm's long life and very high efficiency. The gears are finest quality—helical, heat treated steel.

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of Mishawaka, Ind.

Storage Battery. The new firm will be known as ESB-Reeves Corp. Existing plants of the two parent companies will be used to start the manufacture of the new products. Reeves will produce a line of apparel fabrics that will be waterproof, while permitting passage of water vapor through microscopic pores. Moisture transmission membranes will also find use in filtration. ESB will continue to produce porous materials for storage batteries.

Philippines Press Ramie Expansion. It is reported that Ramie Textiles, Inc., Manila, P. I., will greatly expand its ramie fabric production this year by expanding its spinning, weaving, and finishing operations sufficiently to provide much of the country's requirements. Most of the ramie fabric now used in the Philippines is imported from Japan. The expansion will give the mill a total of 40,000 spindles.

Automatic Stitch Control. Britain's Hosiery and Allied Trades Research Association has announced a simple mechanical method for automatic control of stitch length on knitting machines.

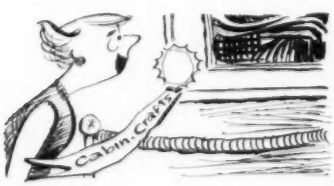
Merchandising Notes

American Carpet Institute conducted a Retail Advertising Clinic recently in St. Louis. Claimed to be the first of its kind developed by the industry, the Clinic gave retail carpet executives a comprehensive analysis of carpet advertising.

American Felt Co. is exhibiting "Hushalon," a new wool felt acoustic wall covering, at the Design Center for Interiors in New York.

American Viscose Corp. used nine pages in the May issue of *Charm* to kick off an extensive advertising and merchandising campaign for fashions in fabrics of Avisco fibers. The campaign has a cruise-to-Nassau theme.

Cabin Crafts, Inc., will exhibit carpeting at the International Trade Fair in Poznan, Poland, this month, and has provided the carpeting to be installed in a five-room house at the American National Exhibition in Moscow in July. * * * The company has been awarded a citation of merit by



the American Institute of Decorators for "a consistently high level of style, color sense, and design in the field of moderately priced carpets and area rugs intended for a mass market. . . "

Callaway Mills, Inc., is permanently mothproofing all its wool rugs, using the trade-mark "Calguard."

Du Pont Co. will sponsor, starting in the fall, a weekly, top-budgeted network television show

starring June Allyson, to promote its synthetic fibers. The new show is in addition to the Du Pont-sponsored "Show of the Month," and will be a "dramatic anthology of contemporary America."

Eastman Chemical Products, Inc., will pick up the tab for the televising of the U. S. Open Golf Championship on June 13, on behalf of its polyester fiber, Kodel.

Gleneagles (Lamm Brothers, Inc.) have introduced a wash-and-wear raincoat of 50% Dacron and 50% Orlon. It retails for about $35.

National Association of Wool Manufacturers is co-sponsor with the National Association of Manufacturers of "Today's Golden Fleece," a 13½-minute film on the U. S. wool textile industry. The film will be shown on 265 television stations in the coming months as one of the "Industry on Parade" series of the NAM.

Owens-Corning Fiberglas Corp. has opened a Fiberglas Fabric Center in the new Skyscraper of Glass at 717 Fifth Ave., New York. About 5,000 drapery fabrics from 50 suppliers are on display.

Textured Yarn Co. has introduced Tycora Orlon Cantrece, claimed to be the first modified continuous filament Orlon yarn.

U. S. Industrial Chemicals Co.'s manager of polyethylene sales, Vincent M. McCarthy, predicts that polyethylene will soon account for over 90% of the transparent flexible film used to package soft goods.

Woolens and Worsteds of America has launched plans for an American Wool Bicentennial in 1960. American mill operations for wool cloth production are claimed to have begun two hundred years ago, in 1760.

Karastan Rug Mills showed carpets made of Agilon textured nylon yarn at the Chicago Home Furnishings Show.

National Retail Merchants Association has complained to hosiery knitters that some mills are giving hosiery to retail salesgirls at a rate which NRMA considers unreasonable. Some girls were

found to have been collecting so many pairs of hosiery as a form of "push money" that they had gone into the business themselves, serving as a source of supply for their friends and neighbors.

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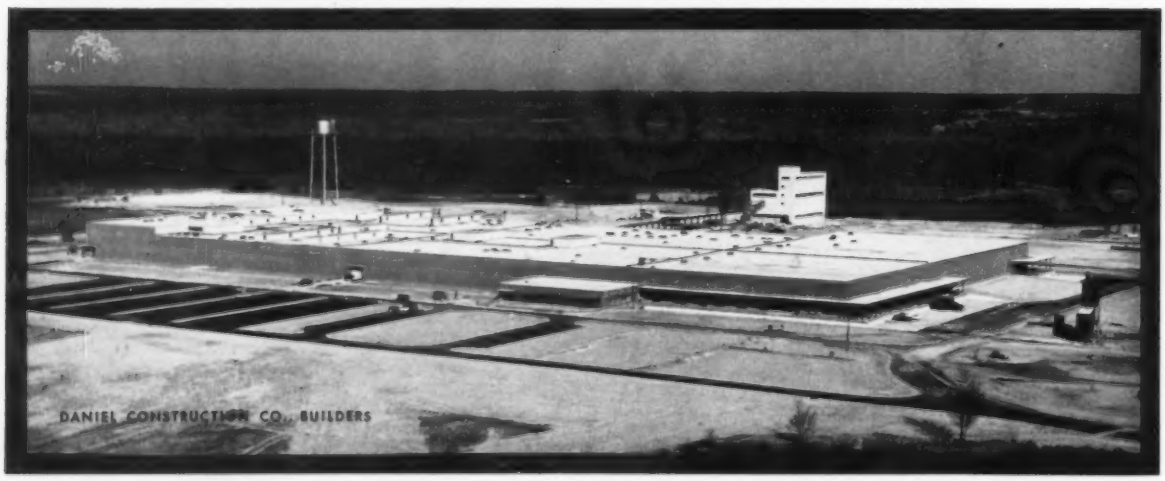

Kendall Mills, Finishing Division of Kendall Co., Bethune, S. C.
A new cotton finishing plant, finishing the cloth produced by The Kendall Cotton Mills Division, which operates seven plants in North and South Carolina. It has approximately 300,000 sq. ft. of manufacturing and storage space.

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FIBERS AND YARNS

Polyvinyl Alcohol Fiber. Air Reduction Chemical Co. is now marketing vinylon polyvinyl alcohol fiber on a developmental scale. It will be recalled that Air Reduction purchased the U. S. rights to this fiber from the Japanese Kurashiki Rayon Co. Ltd. some time ago. At present the fiber is being imported from Japan in staple and tow forms. In Japan vinylon is marketed as "Kuralon."

Straw-Like Rayon. Industrial Rayon Corp. is offering a new flat, straw-like monofilament rayon under the name "Strawn." It is available in bright and dull lusters, in 450- and 1250-denier sizes, at $1.00 and $1.10 per pound. First showing was at the High Point, N. C., Home Furnishings Show, in upholstery and drapery fabrics. (An earlier straw-like yarn produced by this same manufacturer was a multifilament rayon.)

Nylon 4. General Aniline & Film Corp. has disclosed experimental work on nylon 4, based on pyrrolidone. Preliminary study indicates that this fiber is more moisture absorbent than existing nylons 6 and 66, likely to make it more dyeable. Other properties, such as tenacity and durability, resemble those of conventional nylon. (The numbers "66"—actually "6,6"—and "6" refer to the number of carbon atoms in a molecule of the basic raw material.)

Reclaim Nylon from Tires. U. S. Rubber Reclaiming Co. is planning to reclaim nylon from old tires at its Buffalo, N. Y., plant. The reclaimed nylon is said to be as good as the original fiber, except for a slight color. Process for reclaiming was developed by Arthur D. Little, Inc.

Polyolefins. Montecatini will begin production of polypropylene fibers in Italy by the end of this year. Initial price for the staple, to be produced by Montecatini's subsidiary, Polymer Co. of Italy, will be about 60¢ per pound on the Italian market. * * * U. S. Rubber Co. is now producing polyethylene monofilaments and polypropylene monofilaments and multifilament yarns under the name "Royalene." The monofilaments are available in round, flat, oval, or ribbon cross sections, in diameters from 6 to 35 mils; multifilament polypropylene comes in 65 denier.

Adhesive Finish for Rayon. Du Pont "Super Cordura" Type 272-F high-tenacity rayon yarn is now being finished with a new adhesive for use in reinforcing mechanical rubber goods. The new product is claimed to provide good adhesion without the need for fabric dipping.

Japanese Acetylated Viscose. In Japan, fabrics woven and knitted of "Alon," an acetylated high-tenacity rayon staple, have been exhibited by the Toho Rayon Co., Ltd. The fiber is priced at 70¢ per pound and is said to have most of the properties of the fully synthetic fibers, plus greater moisture absorbency. The recently completed plant has a capacity of 10,000 pounds per day. Some problems in the dyeing of piece goods are still to be overcome.

Polyvinyl Chloride Fiber. The Japanese Teikoku Rayon Co. is now offering "Teviron" polyvinyl chloride fiber for use in a variety of apparel fabrics and rugs. Priced at about 50¢ per pound in Japan, the fiber is said to be resilient, nonflammable, and readily dyeable. Texturing is expected to be an important use for the yarns.

Novelty Yarns. The Du Pont Co. has received a patent on a regenerated cellulose yarn with a base denier of 200 to 4000, and heavy-denier crinkled filaments spaced at intervals of ½" to 1½". In England, Courtaulds Ltd. patented a process for the making of bouclé rayon yarns by extruding from two jets, stretching the yarns, and twisting together to provide a core-like effect.

MACHINERY AND PROCESSES

Full-Fashioned Sweater Knitting. A Brooklyn, N. Y., concern is preparing to market a new-type sweater machine which can knit both jersey and rib interchangeably. Production does not surpass the normal F-F machine, but versatility is claimed to effect savings in operations.

Spanish Shuttleless Loom. Details have been disclosed of the Ballbé loom, designed to make fabrics with two picks in a shed. The loom has two independent weaving units driven by one motor. Filling insertion is by a flat, flexible steel strip which acts as a rapier.

Improved Uptwister Spindle Mounting. An English concern is offering its "Spinmo" mounting with rubber pivots, said to lessen the effect of vibration while minimizing noise and providing trouble-free running. The dampening effect provided is expected to help maintain twist uniformity.

New False-Twist Unit. Developed by British Nylon Spinners and being built by Hoburn Aero Components, a new type of false-twist unit is reported to have a production rate many times that of existing machines. The unit operates on a modified twist-tube principle, and apparently produces two ends of false-twist yarn in "S" and "Z" twists. These ends are then plied with a small amount of residual twist.

FABRICS AND FINISHES

New Mothproofing Discovery. The Tin Research Institute in England reports that tests made with

Sales upped 400% since Pogrelis-Meyer, Inc. started Heller Factoring

"Pretty Maid" casual wear was making many misses happy, but the Pretty Maid line presented problems to Harry A. Meyer and Ben B. Pogrelis; their company needed growth capital. That is why, in March, 1951, Pogrelis-Meyer Inc. became a Heller factoring client.

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KEMP OF BALTIMORE

organic compounds of tin ("organotins") dissolved in benzene or trichloroethylene and applied in concentrations of up to 1% on the dry weight of wool appear to give good protection against moths and beetles. Other tests are being carried out to determine the effectiveness of similar compounds in the rot-proofing of cotton and jute fabrics.

UV Absorber. American Cyanamid Co. has developed an ultraviolet light absorber, "UV 314," for polyolefin fibers and films. It will be commercially available next year at a price of $7 to $10 per pound.

Knit Fabric for Reinforced Plastics. An English company has developed a resin-impregnated knitted fabric (fiber content not disclosed) as a basis for reinforced plastics. The "Resnit" material is produced in the form of dry, rigid sheets which can be formed under heat and moderate pressure to any desired shape. The "two-way stretch" makes it suitable for forming shapes achieved in sheet metal only with difficulty.

Nylon Typewriter Ribbon. A new nylon typewriter ribbon, designed primarily for electric typewriters, is claimed to give sharper impressions than ordinary ribbons. It is said to be lint-free, eliminating type-face clogging, and to last six times as long as cotton ribbons. Since the ribbon is thin, three times as much may be coiled on a standard spool.

TEST METHODS

Improved Yarn Crockmeter. An improved mounting method suggested for testing the crocking of yarns provides for having the yarns stretched fairly taut and completely parallel to each other, only one layer thick. Identical levels of color transfer were reported to have been produced on test samples ⅛" and 1½" wide.

Traveler Hardness Tester. West Point Mfg. Co. has developed a traveler hardness tester, said to be simple to operate. It will be made and marketed by Custom Scientific Instruments, Inc.

Fiber Section Cutting. The English Shirley Developments, Ltd., is offering a fiber section kit which includes a stainless steel plate with two contoured holes. Details of an improved method for making fiber cross sections with three techniques for mounting have been disclosed in an English publication.

Fiber Thickness Measurement. A new East German instrument uses a horizontal rammer suspended on two leaf springs from a movable carriage so that horizontal pressure is exerted against a fixed anvil. Pressure can be varied from zero to about 600 grams, and measurements made to a tolerance of less than a micron.

RECENT DEVELOPMENTS

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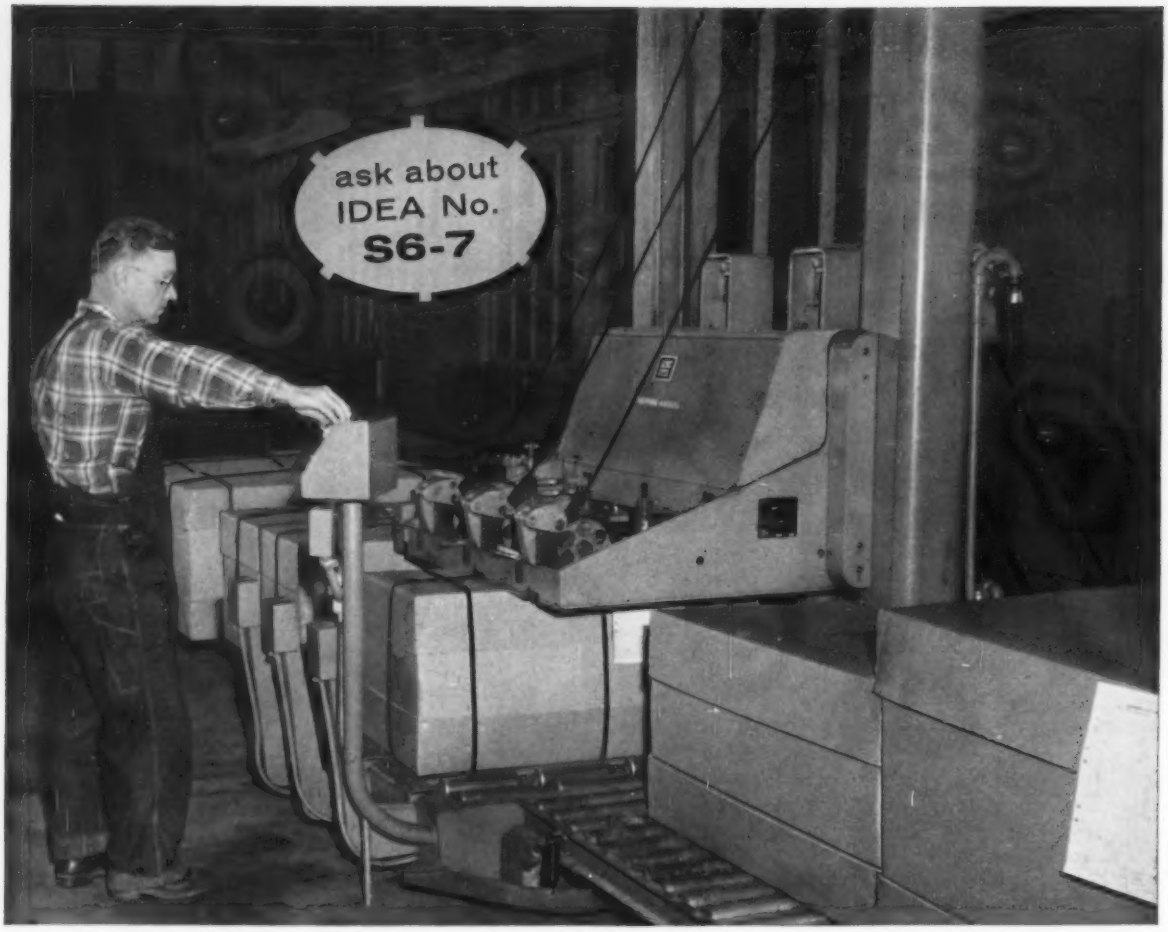

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Strapping Machine compresses, straps textiles

RENFREW BLEACHERY DIVISION OF ABNEY MILLS, Travelers Rest, South Carolina, with the help of their Acme Idea Man, found a better way to compress and strap boxes of cotton cloth. Now an Acme Steel Model F3 Strapping Machine serves as the heart of a highly efficient packaging system. One man straps the entire production in far less time than formerly required. (Idea No. S6-7)

Acme Idea Man J. B. Farr contributed to this modern packaging system.

The F3 successively compresses the pack and tensions, cuts and seals one strap —or two or three straps simultaneously—while the pack is still under compression. Air powered and electrically controlled with push-buttons, it applies each strap with uniform pre-determined tension. After each application, the platen rises and the strapped pack moves down the conveyor. While the following pack moves into the machine, straps are feeding into position for the next application. Packs of varying sizes can be compressed and strapped in any sequence without machine adjustment.

***Know your Acme Idea Man.** Listed in the Yellow Pages under "Steel Strapping", he is well equipped to cooperate in solving your packaging and production problems. Call him today. Or write, Dept. TI 5-69, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Ave., Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**

EXECUTIVE VIEWS

Prepared by a man who is closely identified with the textile industry.

Technological unemployment

JUST NOW, technological unemployment is getting a good deal of attention again. It has been noted that several industries are turning out more production with fewer people, and while they have constantly been doing this for years, it has just now reached a point where it is bothering the labor moguls who strive so mightily to bring it about.

At their latest convention, they duly took note of the onward march of technological unemployment, and came up with their customary wise and prudent solution to this problem—simply reduce the working hours and raise the pay. This is the remedy that the inflationists first think of in any economic crisis, and nothing will give a greater impetus to technological unemployment than artificially inflated wage rates, which all-powerful monopolies impose on employers.

This so-called technological unemployment came into being with the industrial revolution, and the textile industry was its mother. Theoretically, of course, when it was found that one spinner could do the work of many by using a machine to spin, there would be many unemployed spinners. But of course experience soon showed that when one spinner can do the work of many, many people can have yarn who previously couldn't have it, unless of course you pay the one spinner as much for spinning the yarn as you previously paid the many.

Our labor unions today are completely insatiable, and are constantly jacking up wages without the slightest regard to any economic consideration. This of course offers a powerful stimulus to employers to eliminate what they consider to be overpaid workers.

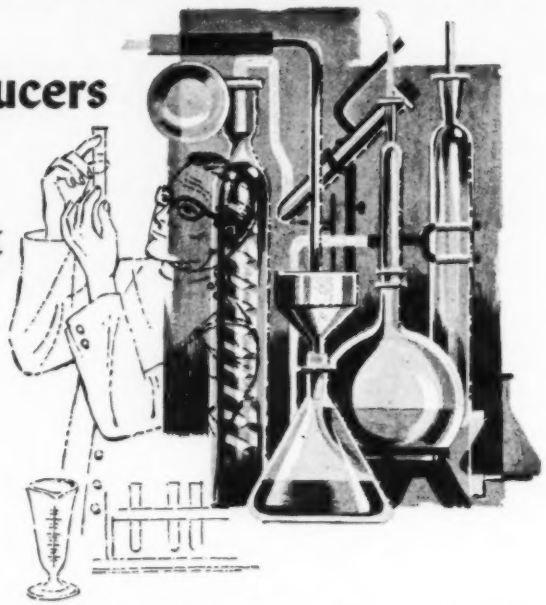
Under the give and take of economic pressures, there will be some jobs that naturally don't pay much. The man who pushes a doffer box from one room to the next is doing work which can not pay very high wages, and so long as he is willing to work for economically determined wages, he has his job, but as soon as his union, mindful of the fact that he needs a new automobile, forcibly jacks his wage up beyond the economic point, the employer will install a mechanical conveyor. Nobody can blame the man for wanting more wages, and nobody can blame the employer for not wanting to pay more for a thing than it is worth.

THE NEW DEAL, with its 40-hour law and artificial minimum wage, gave a tremendous boost to technological unemployment. We remember one cotton mill which maintained a crew of 20 or more scrub women, and when these women's wages had to be doubled by fiat, the mill bought a couple of mechanical scrubbing machines and hired a couple of men to run them, and laid off all of the scrub women. The scrub women promptly went on Government Work Relief, and the taxpayers supported them in idleness where they had previously supported themselves by their labor, but possibly the cause of progress had been served by this bit of inflation.

Technological unemployment is, after all, a mark of progress. Two hundred years ago, a cotton card consisted of a couple of small pieces of board with wire clothing attached, and such an arrangement cost about a dollar or two. Compare the few ounces of sliver a day that the spinner would prepare for his or her own use, and the production that one card hand gets today. Remember, also, that but for this kind of technological improvement, we would all be just about where we were economically in 1776.

TECHNOLOGICAL unemployment is a perfectly natural development, as people are no longer needed to do one thing but become needed to do something else. It should be noted that if we used today the methods in vogue 200 years ago, there are not enough people in the United States to produce the cotton fabrics that we now produce with a relatively

15 of the World's Leading Man Made Yarn Producers use COCKER Warping Equipment *Exclusively*



[To be completely accurate: These mills have installed a total of 8 competitive warpers for comparative purposes . . . against a total of 205 Cocker Warpers.]

Since 1950 Cocker has installed about three times as many warpers as the next leading make. Today most of the world's leading producers of man made fibers now use Cocker Warping Equipment Exclusively.

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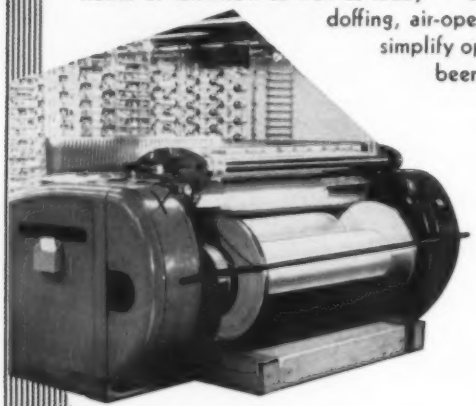

Whatever your warping requirements may be, there is a Cocker Machine which will do the job faster and better. Here are two examples:

The Cocker Model SD-49 Warper (left)

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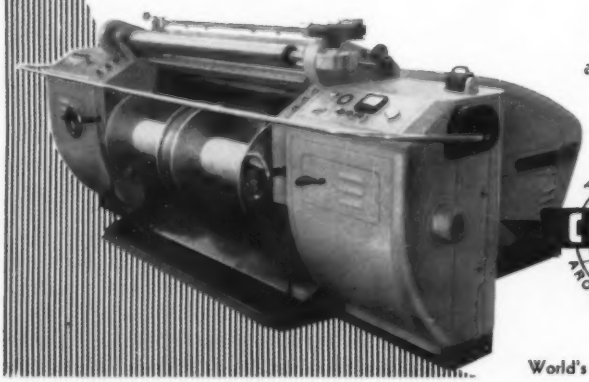
The Cocker Multiple Beam Tricot Warper Model MB55-32 (below)



Will handle 2-21" beams, 1-42" beam, 1-50" or 1-55" Raschel Beam with simple changeover from one set-up to another. Individual controls are in full view and easy reach. Has all modern features and safety devices. Normal sustained speeds up to 600 yds. per minute.

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small labor force, so that without the technological unemployment set in motion by the early textile industry, life would be lived today just about as it was 200 years ago. And while few industries have accomplished such spectacular gains in labor productivity as the textile industry, there are many industries which could never have existed at all but for these gains which spread from the textile industry outward through our economy.

Technological unemployment is going to continue to be with us, and will be more or less painless and unnoticed except where labor monopolies create such absurdly disjointed labor costs that employers are forced to get rid of large numbers of people that they would really have preferred to keep. The man with the 20 scrub women would gladly have kept them on the payroll so long as they lived if they had been willing to work for what he could afford to pay for that kind of a job, and if the government had allowed them to do it.

If they could have got better jobs, they would have quit to take them, so probably what this man was paying them was all they were worth in a competitive economy. The labor union people, however, have little use for a competitive economy. What they want is an inflationary economy, in which nobody has to work for what he is worth, as determined by competition.

An employer has to watch his cost of production, and when he can reduce it substantially by laying somebody off and buying a machine, he will generally do so. If the purchase of the machine was a natural and inevitable thing, because somebody had figured out a newer and better way of doing something, then nobody can be surprised at the machine replacing the man, as it should do.

THE KIND of technological unemployment the labor union people are screaming about is mostly that created by their getting the labor price of something out of reach so that the employer goes to great trouble and expense to devise means of supplanting the over-priced workman with a mechanical arrangement. Nothing is going to be done about this of course, because the constant, unjustifiable raising of wages is a cardinal labor union policy, and no job at all is considered to be better than a job paying what it is worth. The country came by most of its inflationary problems today through this sort of thing.

We doubt that much shorter working hours are a practical answer to anything. When we went on the 40-hour week, we almost automatically went on three-shift operation in industry, and three-shift operation generally means an eight-hour day, or a six-hour day, and that makes

(Continued on page 118)

FUTURE EVENTS

Date		Event	Location
June	5-7	Piedmont Section AATCC outing	Grove Park Inn Asheville, N. C.
	12	Rhode Island Section AATCC annual outing	Metacomet Country Club East Providence, R. I.
	12	Western New England Section AATCC outing	Wallingford, Conn.
	12-13	Mid-West Section AATCC outing	Brown Lake Resort Burlington, Wis.
	12-14	Southeastern Section AATCC summer outing	Radium Springs, Ga.
	18-20	Southern Textile Association annual convention	Ocean Forest Hotel Myrtle Beach, S. C.
	26	Hudson-Mohawk Section AATCC annual outing	Antlers Country Club Amsterdam, N. Y.
	26-27	South Central Section AATCC outing	Riverside Hotel Gatlinburg, Tenn.
Sept.	10-11	Fiber Society, Inc.	Princeton, N. J.
	10-21	3rd International Textile Exposition	Samples Fair Grounds Milan, Italy
	17-18	Chattanooga Yarn Association outing	The Read House Chattanooga, Tenn.
	18	Northern New England Section AATCC outing	Wachusett Country Club West Boylston, Mass.
	28-29	American Gas Association Textile Processing Symposium	Sedgefield Inn Greensboro, N. C.
Oct.	1-2	Textile Quality Control Association	Grove Park Inn Asheville, N. C.
	3	Textile Operating Executives of Georgia slashing and weaving discussion	Georgia Tech Atlanta, Ga.
	7	Chemical Finishing Conference	Mayflower Hotel Washington, D. C.
	8-9	North Carolina Textile Manufacturers Association convention	Carolina Hotel Pinehurst, N. C.
	8-10	AATCC National Convention	Sheraton Park and Shoreham Hotels Washington, D. C.
	10	Alabama Textile Operating Executives carding and spinning discussion—9:30 A.M.	Langdon Hall Auburn, Ala.
	17	Textile Education Foundation, Inc.	Georgia Tech Atlanta, Ga.
	27	Institute of Textile Technology technical advisory committee and board of trustees	I.T.T. Charlottesville, Va.
1960			
Feb.	8-9	National Cotton Council annual convention	Dallas, Texas
Apr.	7-9	American Cotton Manufacturers Institute convention	Americana Hotel Bal Harbor, Fla.
May	23-27	American Textile Machinery Exhibition	The Auditorium Atlantic City, N. J.
Oct.	3-7	Southern Textile Exposition	Textile Hall Greenville, S. C.

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A NEW CONCEPT IN TEXTILE DRYER DESIGN

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4.. Exceptionally economical in gas consumption.

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This Radiant Heat Dryer, the latest in a long line of equipment developed by A & G for the textile industry, is offered to textile finishers as a sure means of drying dyed goods...economically...without migration...without the need of intensely high temperature heat sources.

When inquiring for a more detailed description, we would appreciate it if you would outline your production requirements.

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One by one all cards are being equipped with metallic clothing, the installation being made by the mill's own personnel as described here.

How Canton Cotton Mills improved fabric appearance and

CUT COST $350 A CARD

Staff prepared Exclusive

NOW in the process of having all cards in both mills equipped with metallic clothing, management of Canton (Ga.) Cotton Mills reports that manufacturing costs drop and cloth quality climbs with each metallic-clothed card placed in production.

Savings on Waste. In these mills it has been found that the annual waste saving on a per card basis is $262.00.

"We lose $67.00 a year because of a decrease in the quality of flat strips," an official explained. "But we gain $104.00 a year because of decrease in the amount of flat strips removed from the stock and an additional $225.00 a year because of elimination of cylinder and doffer strips. This gives a net gain of $262.00 per card per year."

Savings on Labor. The annual labor saving on a per card basis has been found to be $98.42—cost reduction on stripping amounts to $83.35 and on grinding $13.07.

Grinding is unnecessary, except in rare cases. Stripping is done by roller once per week to remove the trash that has become embedded in the wire (compared with a 1 hr. 45 min. interval on flexible cloth-

TABLE 1
Changes in Card Waste Effected by Metallic Clothing

	Conventional clothing waste (%)	Metallic clothing waste (%)	Difference (%)
Card fly	2.29	2.20	0.09
Flat strips	2.63	1.99	0.64
Cylinder and doffer strips (tank)	1.47	None	1.47
Total non-reworkable	6.47	4.19	2.28
Total reworkable	1.29	0.78	0.51

ing).

Installation Cost. The clothing and the labor required to apply it cost the company $502.00 per card. Canton's own job-trained employees install the clothing, using the procedure described with words and pictures in this article.

Considering only the annual savings in waste ($262.00) and labor ($98.42), management expects the clothing to pay for itself in 1.4 years.

In addition to this, there is the improvement in quality which is attributed to the metallic clothing.

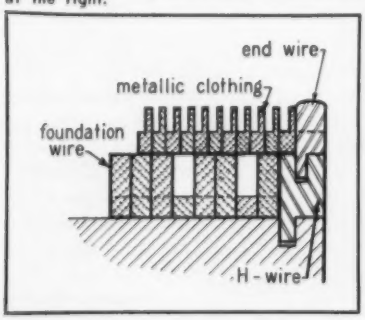
Effect on Quality. It has been found that a much smoother web is produced on cards equipped with the metallic clothing. Where three neps appeared formerly, only two are found now.

Card sliver is much more uniform; consequently, long-term evenness of yarn is improved—14 per cent better coefficient of variation.

The reduction in reworkable waste amounts to 40 per cent; non-reworkable waste, 34.4 per cent. Table 1 gives the complete before-and-after waste picture.

Finally, the general appearance of Canton's fabrics has shown a marked improvement.

When metallic clothing is properly installed, it literally becomes a part of the cylinder or doffer, as shown in this partial cross section sketch. Note that there are four different kinds of wire used—H-wire, foundation wire, end wire, and the metallic clothing itself. Close-up photos of these appear at the right.



CLOTHING PROCEDURE

As mentioned previously, mill employees were trained and are utilized to install metallic clothing. Following is a description of the procedure as prepared by the writer from notes made while observing a card being clothed.

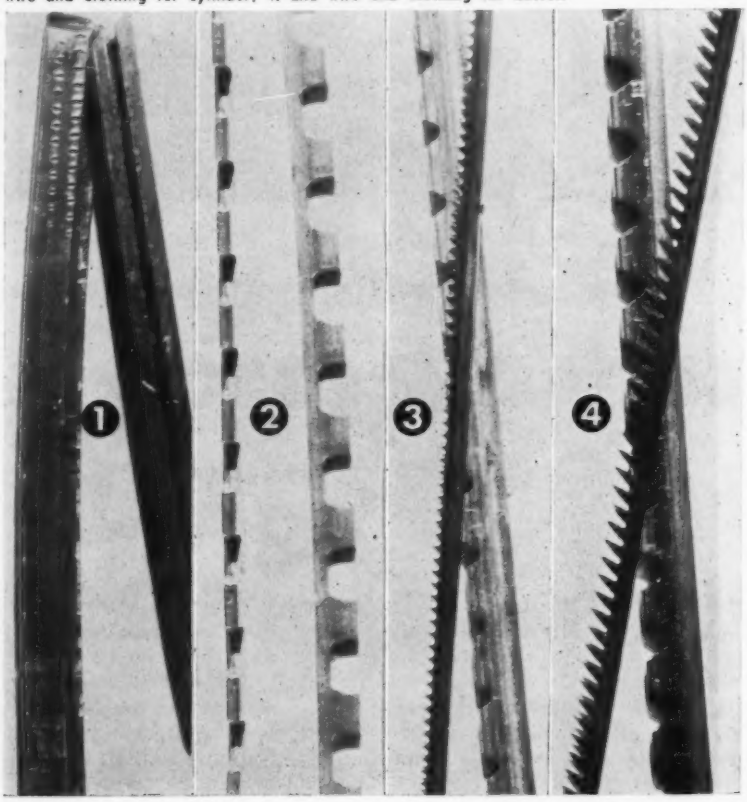
It was pointed out that proper preparation of the card for clothing is just as important as proper application of the wire.

Preparing the Card for Clothing. The overhauler inserted a leaf gauge in the doffer bearing and found that it had more than the allowed 0.008" clearance. Then, as the cylinder bearing showed more than 0.012" wear, both doffer and cylinder bearings were removed for inspection of the journals.

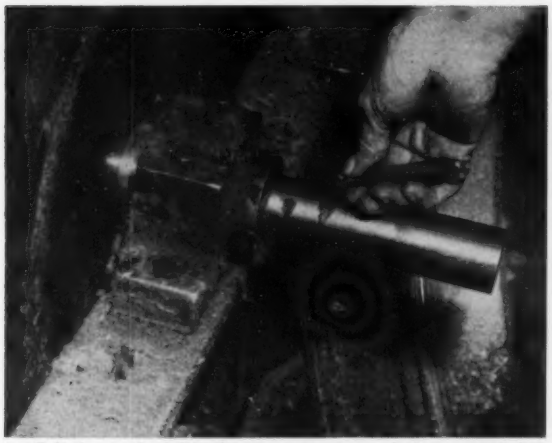
The doffer journal showed a definite wear pattern, so it was scheduled for replacement. The cylinder journal remained smooth and without tell-tale rings and grooves worn around its circumference, so it was left in place and fitted with new bronze bushings into which had been pressed an inner oil-impregnated sleeve.

Only then did the overhauler move to install the metallic clothing, for the 430-odd pounds added by the clothing demanded that the cylinder, doffer, bearings for the two, and all supporting members be main-

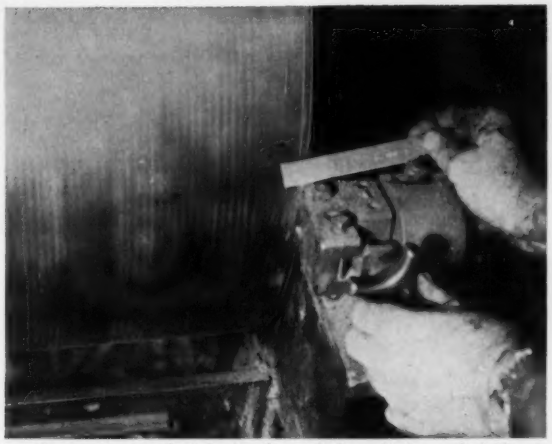
Components used at Canton for clothing cylinders and doffers are pictured here: 1. H-wire (used on cylinder and doffer); 2. Foundation wire (used on cylinder and doffer); 3. End wire and clothing for cylinder; 4. End wire and clothing for doffer.



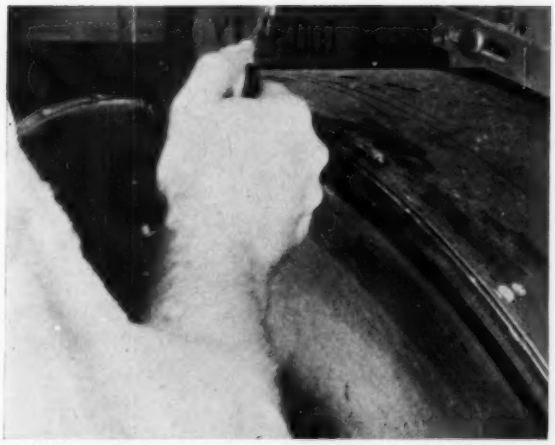
How metallic clothing is applied at Canton Cotton Mills



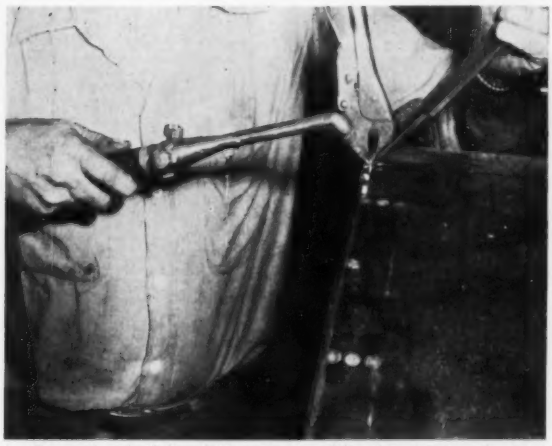
1. Cylinder and doffer bearings are gauged for wear. Worn journals and brasses are replaced.



2. Groove is scored at both edges of the cylinder and doffer to receive the H-wire (see sketch and photos on opposite page).

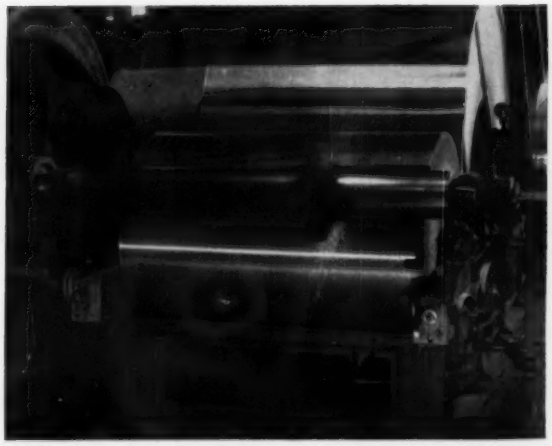


3. H-wire is tamped into place, cut, ends soldered together, and the joint smoothed.



4. Tapered end of foundation wire is soldered to H-wire, the joint smoothed, and foundation wire winding operation started.

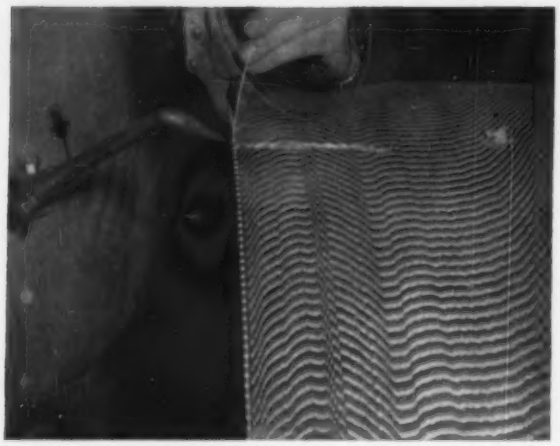
5. Foundation wire installation having been completed, Arthur Mitchell closely inspects it. Note pattern formed by serrations.



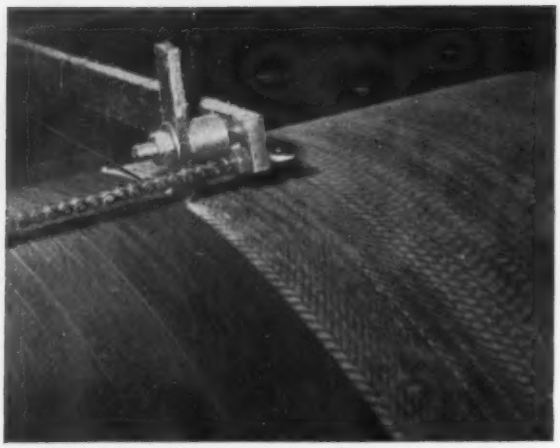
6. Foundation wire is ground to remove eccentricity and given another inch-by-inch inspection.

(Continued next page)

How metallic clothing is applied (continued)

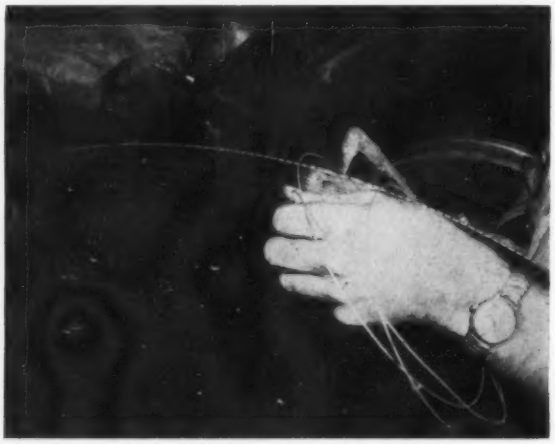


7. End wire is installed in the groove of the H-wire, metallic clothing is soldered to it, joint cleaned, and clothing winding started.



8. Clothing is carefully wound onto cylinder. Note device which packs coils together. For over-all view of operation, see photo on page 85.

9. The last coil of clothing is secured as the end wire is tamped into place.



10. The end of the clothing is soldered to the end wire, completing the metallic clothing application.

11. Finally, the surface of the clothing is ground, and.....

card is set as shown in Table 2. Grinder pictured is Turner Lathem.

tained in top condition.

Having removed the old flexible clothing, the overhauler then tamped all wooden plugs below the cylinder surface to get them out of the way of the foundation wire for the metallic clothing. He also inspected every inch of the surface of the doffer and cylinder for cracks, paying very close attention to the edges and looking for areas that might later give way when the cylinder and doffer were grooved to receive the outside foundation wire.

A special tool rest was secured to the card frame and the bit positioned so that it would score a groove 5/16" from the outer edge of the cylinder and started the motor used to drive the card for winding. Once the bit had eaten into the metal far enough to offset cylinder eccentricity, he slowly fed the bit into the cylinder the minimum amount—two turns of the tool-post wheel. This depth assured him that the foundation end wire (H-wire) would not bottom in the groove when the wire was tamped into place. The operation was repeated to provide a groove at each edge of both the cylinder and the doffer.

The card was then ready for the metallic clothing to be installed.

Clothing the Card. An assistant produced a length of H-wire (refer to the close-up photo, on page 86, of the materials used). This wire is made with an offset flange to permit it to be tamped into the previously mentioned grooves in cylinder and doffer, and it contains a groove on top to receive the end wire of the metallic clothing proper.

This H-wire was tamped into place (see the sketch on page 85) and the ends secured with silver solder, resulting in a nearly indestructible union of H-wire and cylinder. To this wire the overhauler then sweat-soldered one file-tapered end of foundation wire, at the same time spotting a few beads of solder on the H-wire to act as support for the mild taper the foundation wire would assume as it finished the first wrap around the cylinder and approached the foundation-wire-H-wire joint.

The wire was applied with a special driving and tensioning device supplied by the clothing manufacturer. This unit is similar to the equipment used for installing conventional flexible clothing, but it does not reflect winding tension in pounds. Thus, the tension is left to the discretion of the person applying the clothing, and he normally tests cylinder wire tension manually by applying force laterally to the strand as it leaves the tension block and travels to the cylinder.

Since tension is not as important to the metallic clothing as it is to flexible clothing, it can be controlled by watching wire behavior—too little tension lets the wire lie flat on the cylinder or doffer, while too much tension simply pulls it in two.

The coils of wire are packed together on the cylinder and doffer by a simple device that applies about 30 pounds of force laterally. A chisel-shaped metal finger holding a tungsten-carbide tip applies the compacting force, the carbide tip being hard enough to run against the wire indefinitely.

As the wire passed from its reel to the cylinder, the overhauler rarely took his eyes from the point where the wire first contacted the cylinder and was jammed into place by the weight-pulled finger.

While the process is carried out most of the time without incident, the possibility of an accident is always at hand. And accidents when applying metallic clothing are troublesome, not to mention the physical hazard. Imagine the situation created by a strand snapping and suddenly setting free several hundred cylinder-size coils of serrated wire. Obviously, someone stays within easy reach of the winding motor stop button at all times.

As the final wraps of the foundation wire were applied, the chisel-shaped finger that compacts the coils was squeezed progressively between the clothing and the H-wire until it finally was lifted up out of its working position. The last wrap or two was tapped into place carefully, the cylinder being inched over as needed. It was explained that this is a critical spot in the process, since one coil too many tapped into place will easily chip away portions of the flange formed by the H-wire groove and the cylinder edge.

The last round having been tapped in place, the foundation wire was cut and the end soldered to the H-wire. The groove in the top of the H-wire was then opened, bits of solder, etc., removed with a hacksaw, and the weld smoothed with a file. The routine was the same for the cylinder and the doffer.

Surface Grind, Then Wrap Again. Once the cylinder and doffer were covered with a new layer of metal, heavy traverse grinders were used to remove any eccentricity present in either the doffer or cylinder. The grinding is made easier by the serrations in the foundation wire that render the surface almost half "air." In effect, this is similar to grinding the teeth off a stack of saws.

Another inch-by-inch inspection followed grinding.

Then the metallic clothing (top layer of wire) was applied with the same techniques used in installing the foundation wire. Once the members were ground to concentricity, the starting end wire for the metallic clothing was tamped into the H-wire groove and soldered into place. The file-tapered end of clothing was sweat-soldered to its end wire.

Even with the file-tapered end present, a slight unsupported section of foundation wire would exist where the first wrap of wire left the H-wire and started its second wrap, this time against the first wrap of foundation wire. A few drops of solder were spotted on the H-wire immediately in front of the spot at which the foundation wire joined the H-wire. These drops were filed away in a manner to supply supports for the "taper."

The overhauler explained that the toothed or working part of the clothing is the portion most likely to "lie down" or "fall over" during drawing. As is shown in the close-up photo, the metallic clothing resembles a band saw, and winding a band saw edgewise hundreds of times around and around a large cylinder would be no average task. Neither is winding so many turns of metallic clothing. Although the clothing is much softer than band saw metal and conforms readily to the cylinder's shape, it still is balanced on edge and awaiting "half a chance" to topple. However, the situation is helped somewhat by the base of the wire being thicker than the teeth.

Whenever a few coils do topple (see illustration on page 90), the drawing operation is brought to a stop with the clothing under tension. Small pieces of leather are hammered onto the teeth of the unaffected clothing near the fault to keep that portion from shifting when the tension is relieved. It is then safe to backwind the loose clothing onto the reel and resume the drawing operation. The leather blocks are never driven onto the teeth hard enough to damage the wire tips, and they are removed carefully after they have served their purpose.

As the coils of metallic clothing neared the groove in the H-wire, the overhauler left the controls in the hands of his helper and moved to watch the winding progress at close range. He soon would have to stop

TABLE 2
Card Settings Used with Flexible and Metallic Clothing
(settings given in thousandths of an inch)

	Flexible	Metallic
Feed plate to licker-in	10	7
Mote knife (top)	7-9	12
Mote knife (bottom)	7-9	10
Licker-in to cylinder	7	7
Back plate (top)	17	17
Back plate (bottom)	22	22
Flats to cylinder (wooden floor)	10	9
Flats to cylinder (concrete floor)	10	7
Front plate (top)	34	34
Front plate (bottom)	37	10
Doffer to cylinder	7	7
Doffer to comb	17-22	17-22
Licker-in screen	34	34
Cylinder screen (back)	17	22
Cylinder screen (center)	34	34
Cylinder screen (front)	3/16"	3/16"

Card cylinder speed is 170 rpm; production 20 lb/hr on 65-gr sliver, and 12 lb/hr on the 55-gr sliver used for filling yarns; warp counts range from 7.00s to 13.00s; and filling counts range from 6.50s to 16.00s.

the winding and begin inserting the end wire when his practiced eye told him that the cylinder had received exactly enough wire.

This is a tricky situation, for the metallic clothing must be held snugly, compacted slightly, as the end wire is driven into place. Naturally the clothing cannot be driven into place as is the foundation wire, so it is carried into place as the end wire is driven home by hammer blows on a swage-like tool. The cylinder is inched over as needed, keeping correct tension right up to the point at which the overhauler cuts the wire and solders it to the end wire.

Once the clothing is properly in place, it literally becomes a part of the cylinder and doffer, although it is not welded, soldered, brazed, or otherwise fused to the surface of these rolls. Those end wires carefully tamped into grooves, the end-wire-to-clothing soldering, and the grip provided by so many turns of tightly drawn wire result in the clothing having an unbreakable hold on the cylinder and doffer—almost. The coefficients of thermal expansion in cylinder, doffer, and the clothing are said to be so nearly the same that temperature changes have no noticeable effect on clothing tightness—there is no more flying up on cold Monday mornings.

Final Grinding. The surface of the new metallic clothing must still be ground, the overhauler pointed out. This is first done with heavy-duty surface grinders. Once these grinders have done most of the heavy work, lighter-duty conventional traverse grinders, fitted with stones instead of abrasive fillet, may finish the job, as these—not the heavy grinders—are used for "touching up."

The big surface grinders seemed to enjoy working away on something as yielding as a "sawtooth," for they produced a small shower of sparks as they trimmed the clothing down to size. A grinder remarked, "A carder of the old school would let out a howl if he found one of his cards sparking that way."

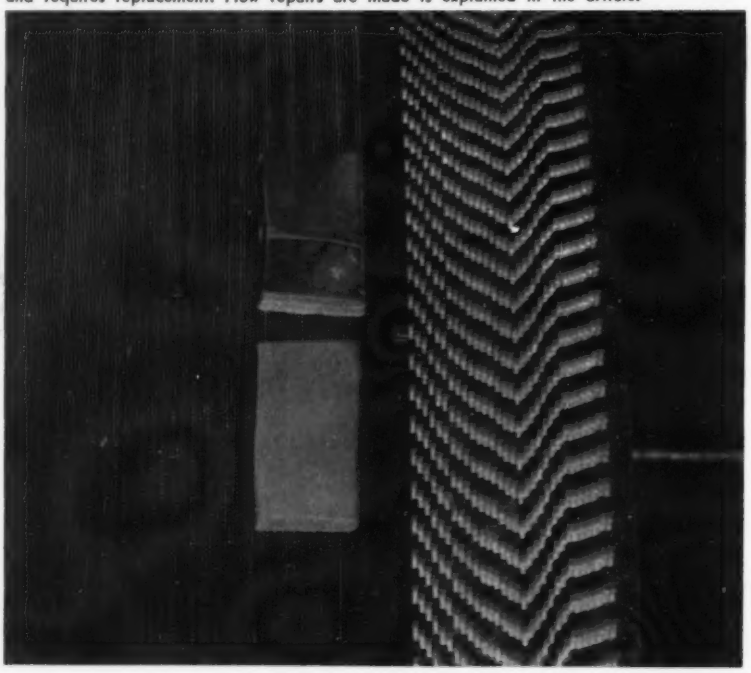
The wire points of flexible clothing must be a long way out of line if they spark when the grinder hits them, for the very nature of the flexible clothing permits the wire to yield when pressed by the grinding roll. But the metallic clothing has nowhere to go (everything beneath it is practically solid metal) and consequently high places disappear in a burst of fireworks when the grinding roll really sits down on it and rubs hard. The grinder's ears, already tuned to flexible-clothing-traverse-grinder music, has little trouble understanding the sounds given off as the grinder attacks metallic clothing.

Settings. After final grinding, the metallic clothed card was set. It was observed that at some points settings were closer than flexible clothing will allow. The close settings, management pointed out, are necessary and are not made just because the system will allow them.

The settings used at Canton with both flexible and metallic clothing appear in Table 2. Several of the settings are the same, but some differ considerably.

The card grinder soon learns that

Should the metallic clothing topple over during the winding operation as did several coils pictured here to the right of the two pieces of leather, that portion must be withdrawn from the cylinder and rewound. Before this can be done, however, the sound wire must be locked in position to keep it from unwinding while the corrective action is taken. Pieces of soft leather or wood are driven down onto the teeth of the good wire, as shown here, holding the wire in place. This same method is utilized when repairing a portion of the wire that has been damaged to the extent that it no longer does good carding and requires replacement. How repairs are made is explained in the article.



the "tight" or "loose" gauge feel does not apply to metallic clothing. For instance, when the cylinder-to-doffer setting is made to 7/1000", the 5/1000" blade will "find" neither cylinder nor doffer clothing. Neither can the 10/1000" blade be inserted without considerable force.

Traditionally, flats-to-cylinder settings are not much closer than 12/1000" when the cards are mounted on wooden floors, especially on second- and third-floor wooden floors. Consequently, the 9/1000" setting used with metallic clothed cards on Canton's second-floor wooden floors may cause an old-timer concern. The same may be true of present-day carders who are not familiar with the manner in which metallic clothing grinds out cleanly. Canton's management explained it as follows:

Flexible clothing yields or presses aside as a gauge is inserted, and it is free to recover and fill up part of the space as the gauge is removed. Apparently the firmness of metallic clothing allows a 9/1000" air gap to remain that size when the gauge is removed—a condition that allows the close flats-to-cylinder setting on wooden floors.

Assuming that flexible clothing presses aside during setting, and assuming that metallic clothing does not, then it follows that flexible clothing set to an arbitrary 9/1000" must in reality be closer than the 9/1000" gauge indicates. If this is not true of metallic clothing, then it follows that metallic clothing must be set closer than flexible clothing to effect the same degree of carding.

Setting of cards with metallic clothing continues on the schedule established for flexible clothing, but the cost is lower. Now a helper and two grinders are employed per shift compared with the three grinders formerly needed. Flats are still ground.

Operatives Watch for Chokes. Since the front bottom plate is dropped as low as possible and set closer to control air currents, the danger of chokes coming over the doffer and jamming the plate against the cylinder is increased. Although the frequency and gravity of this condition vary, it is a point that is watched closely. A web that jumps the comb and wraps around the doffer will not run as long as it does on flexible clothing before the damage begins, it was pointed out.

Chokes at the ends of cylinders and doffers occur more frequently with metallic clothing, Canton's experience indicates. These are hooked out periodically to prevent snowballs.

The wire faces stubbornly. The conventional flats clothing takes the real beating whenever a choke attaches itself to the cylinder and begins to make the circuit. Such occasions may simply scalp several flats, deform a screen or two, and leave the metallic clothing "wondering what the noise was all about."

However, metallic clothing can be damaged, and minor damage can be corrected. But if the points are beaten fully down, they cannot be straightened and the clothing must be replaced.

Clothing Repair Procedure. Once a section is damaged until it no longer cards properly, small leather or wooden pieces are hammered onto the wire on each side of the damaged spot to tie the clothing down (see photo on opposite page). Then, the bad wire is cut out with a chisel, the pieces removed, ends of the good sections welded together, and the wire redrawn. Enough new wire is used to finish covering the card, and this wire is ground down to the level of the older clothing.

Repair costs hinge in part on the accident of having the damage occur near the side of the card from which the clothing is wound. From the front of the card, the winding is done from right to left, so if the accident occurs at the right-hand selvage, the entire mass of clothing must be redrawn. Whereas, if the opposite selvage were bent, the redrawing would involve only that portion of the right selvage needing replacing.

Loom reed maintenance tips

■ NEVER pound down the reed cap or hand rail when putting reeds in the loom, advises Clayton E. Schmidt of Schmidt Mfg. Co., as dent wires can be easily distorted by this action. If necessary, he says, tap lightly *only* at the extreme ends over the heading bars.

Following are some other recommendations offered by Mr. Schmidt for reed care and maintenance:

1. Store all reeds flat and supported their full length. Use waterproof bags.

2. Use reeds no higher in depth than what is actually necessary.

3. Make sure the type and size of the reed backs properly fit the lay.

4. Use standard width dent wire—.105". Using extra wide wire adds very little strength to the axis of the bending. Mostly, it adds to the reed price. For extra strength, cut down the air space or the depth—or both.

5. Use only very fine brass, horsehair or nylon brushes for cleaning reeds.

6. Unless a reed expert is employed at the mill, let the manufacturer take care of any repair work.

1958 man-made fiber output down 9 per cent

■ PRODUCTION of man-made fibers in the United States last year totaled 1,606,700,000 pounds, a decline of 9 per cent from the 1957 total, according to "Textile Organon," statistical bulletin of the Textile Economics Bureau, Inc.

United States production of rayon and acetate last year totaled 1,014,300,000 pounds, a figure 11 per cent under the 1957 total. The output of acetate filament yarn at 222,600,000 pounds showed a gain of 7 per cent compared to the previous year, while acetate staple and tow at 54,400,000 pounds was up 1 per cent.

Production of high tenacity rayon yarn last year, totaling 264,500,000 pounds, was 22½ per cent under the previous year; output of regular and intermediate tenacity rayon yarn at 148,600,000 pounds was down 10½ per cent; rayon staple at 324,200,000 pounds was off 12½ per cent.

Non-cellulosic filament yarn and monofilament output in 1958 was said to amount to 319,000,000 pounds, a decline of 5 per cent from the output in 1957. Non-cellulosic staple and tow last year came to 170,000,000 pounds, 6 per cent under 1957. Textile glass fiber output of 103,400,000 pounds was 5½ per cent under that of 1957.

Modern screen printing methods and flash aging produce vats of excellent fastness for an exclusive drapery and upholstery market

Automatic vat printing

Staff prepared Exclusive

THE HISTORY of Stonehenge Processing Corp., screen printers of high quality drapery fabrics, goes back only 10 years. But in this time, the company has already made an addition to its modern building, located in the Industrial Village of Cedar Grove, N. J.

What has been largely responsible for this growth is a management enthusiasm toward new developments in equipment and technology, and a willingness to invest in them after appraisal—even though some risk may be involved. In fact, Stonehenge's founding was based on a decision to purchase the Buser automatic screen printing machine, of which the company now has two, and around which it built its plant.

A second big venture, tied closely to its screen printing operations, was the adoption of the flash aging process. Though flash aging cannot be regarded as a new technology, it nevertheless required much practical experimentation before the "bugs" were worked out and the process became practicable on a day-to-day basis.

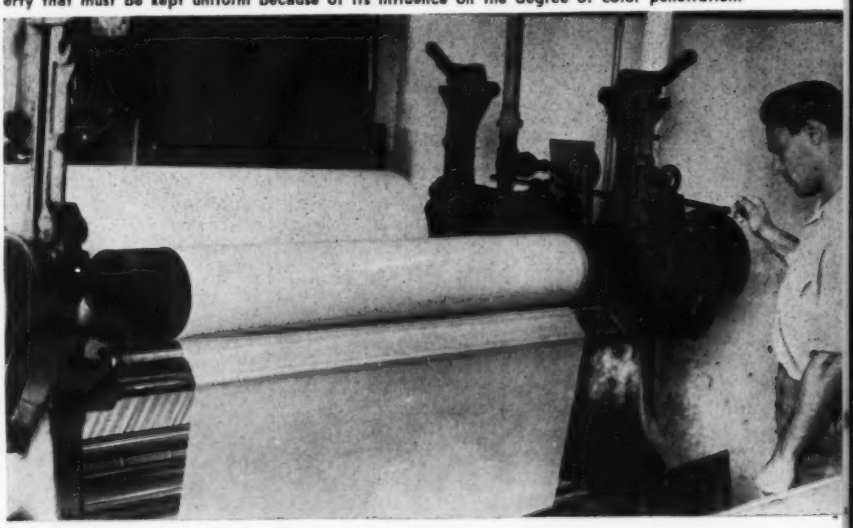
Both these ventures accomplish a major Stonehenge objective: to meet the demands of an exclusive market for high quality printing at a high rate of productivity.

Cotton Is King. Cotton fabrics, in a variety of constructions and textures, make up the largest percentage of Stonehenge production, which goes into exclusive drapery and upholstery lines. In many cases, the production runs are of small yardages.

Thus the two principal advantages of flash aging make the process economically attractive to Stonehenge: (1) Vat prints can be stored indefinitely to make possible more economical processing after printing, and (2) The stronger caustic-hydrosulfite formula affords a wider range of vats of excellent yield and fastness properties. Moreover, the equipment, which is of simple design and construction, requires very little space—a problem of growing concern to diversifying Stonehenge.

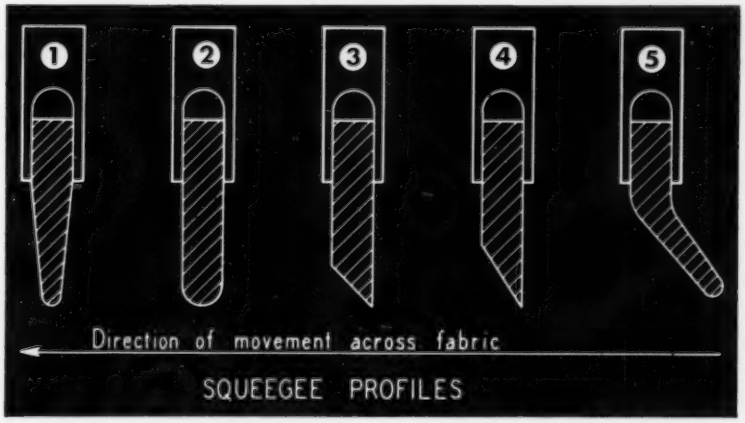
As mentioned earlier, the automatic screen printing process and

Although most of the fabrics printed at Stonehenge, particularly cottons, are prepared elsewhere, the plant has equipment for singeing, desizing, and boiling off. Cotton fabrics are usually prepared at a bleachery which has standardized its operations for Stonehenge vat printing requirements. The fabrics are first tested for absorption—an important property that must be kept uniform because of its influence on the degree of color penetration.



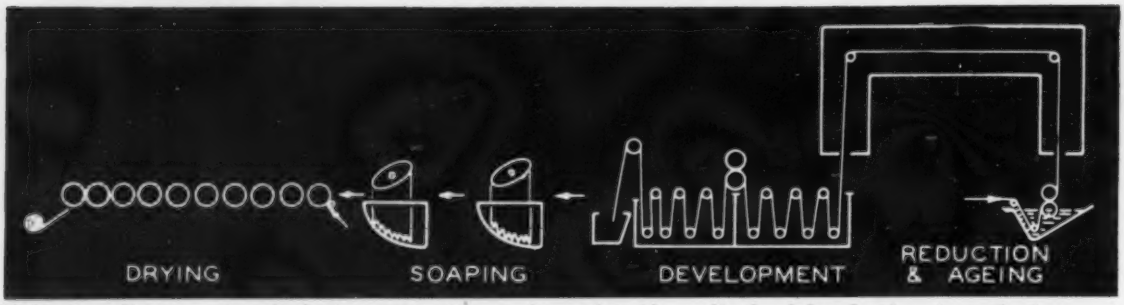
Stonehenge has two Buser automatic screen printing machines which allow precision fitting of as many as nine colors at a productivity that reaches 500 yards per hour. The operation consists of four distinct movements, each electronically controlled: (1) Raising of the screens, (2) Advancement of the fabric (on an endless blanket), (3) Lowering of the screens, and (4) Movement of the squeegees across the fabric, and back for resumption of the cycle. The unit contains a drying box and batching facilities, which are arranged in tandem.

The five squeegees shown at right in cross section, actual size, are most commonly used. No. 1 is a sharp squeegee of hard rubber; it deposits least amount of paste on the fabric. It finds most use in fine-line printing. No. 2, a round squeegee, also of hard rubber, deposits somewhat more paste than No. 1. No. 3, of bevel shape and also of hard rubber, applies the most paste to the fabric. No. 4, also of bevel shape but of soft rubber, is an all-purpose squeegee, largely used for printing blotches. No. 5 is slanted in shape and of soft rubber composition; this type is most gentle on the silk screen. As a rule, two identically shaped squeegees are used—one for the forward stroke across the fabric and one for the return stroke—but other combinations of shapes are also used.



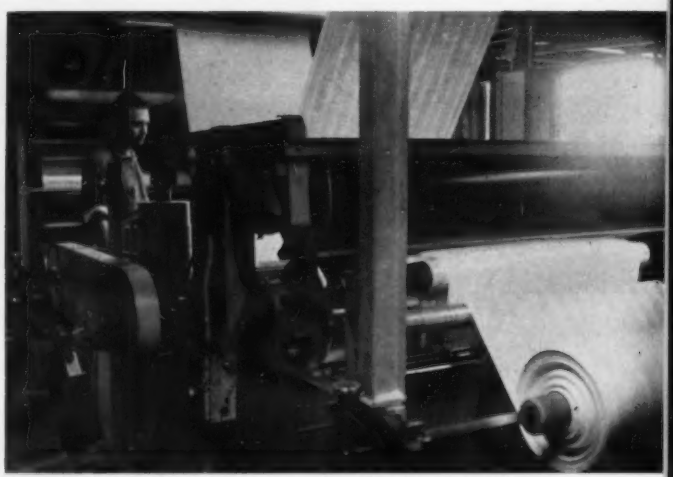
SQUEEGEE PROFILES

In the movement of the squeegees across the screen, one squeegee remains idle (in the raised position) while the other is pressed against the screen, pushing the color paste forward. On the return stroke, the idle squeegee is lowered and the other is raised. At the right, a nine-color drapery fabric is being printed with vat dyestuffs which were selected for their fastness properties and which meet the requirements of flash aging.



Flash aging offers two principal advantages: Vat prints can be stored indefinitely, since no reducing agents are present; and reduction-fixation can be achieved in a short time, with excellent color fastness. Although the process appears deceptively simple, it requires sound vat color selection and print paste formulation, together with a working knowledge of equipment operation to preserve sharpness of printing without "flushing." Caustic-hydrosulfite offers rapid reduction of a wider range of dyes than is possible with the carbonate-sulfoxylate formulation. Aging takes place in up to 30 seconds, followed by peroxide development, soaping, and rinsing.

After two successive soapings to remove excess vat color (following flash aging, cold-water rinsing, and color development in a peroxide bath), the printed fabric is dried over stainless steel cans, and then is finished. These drying cylinders are also used for drying the fabrics prepared at Stonehenge—rayons, synthetics, and blends.



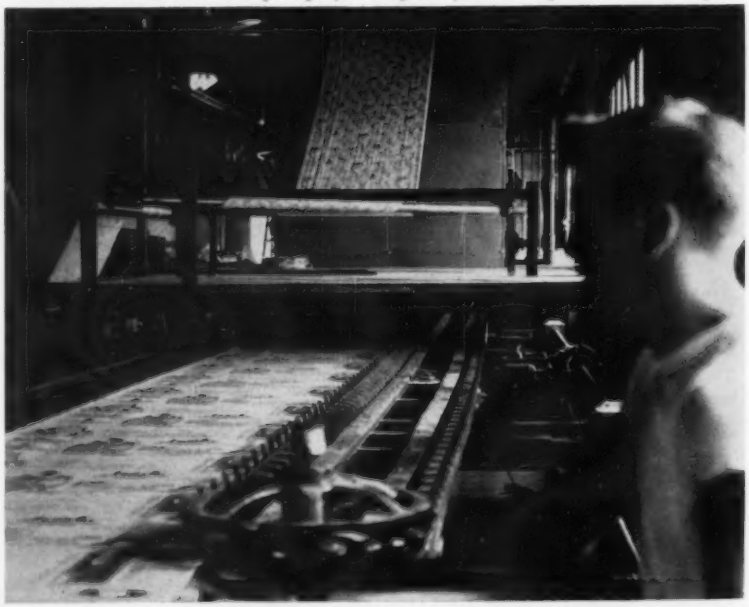
The bulk of the cotton fabrics processed at Stonehenge are given a resin finish. The equipment shown includes padder, stainless steel drying cans, and an overhead hot flue dryer. This equipment is used for all types of finishing, and also for pigment dyeing; it offers great processing flexibility in a relatively small amount of space.

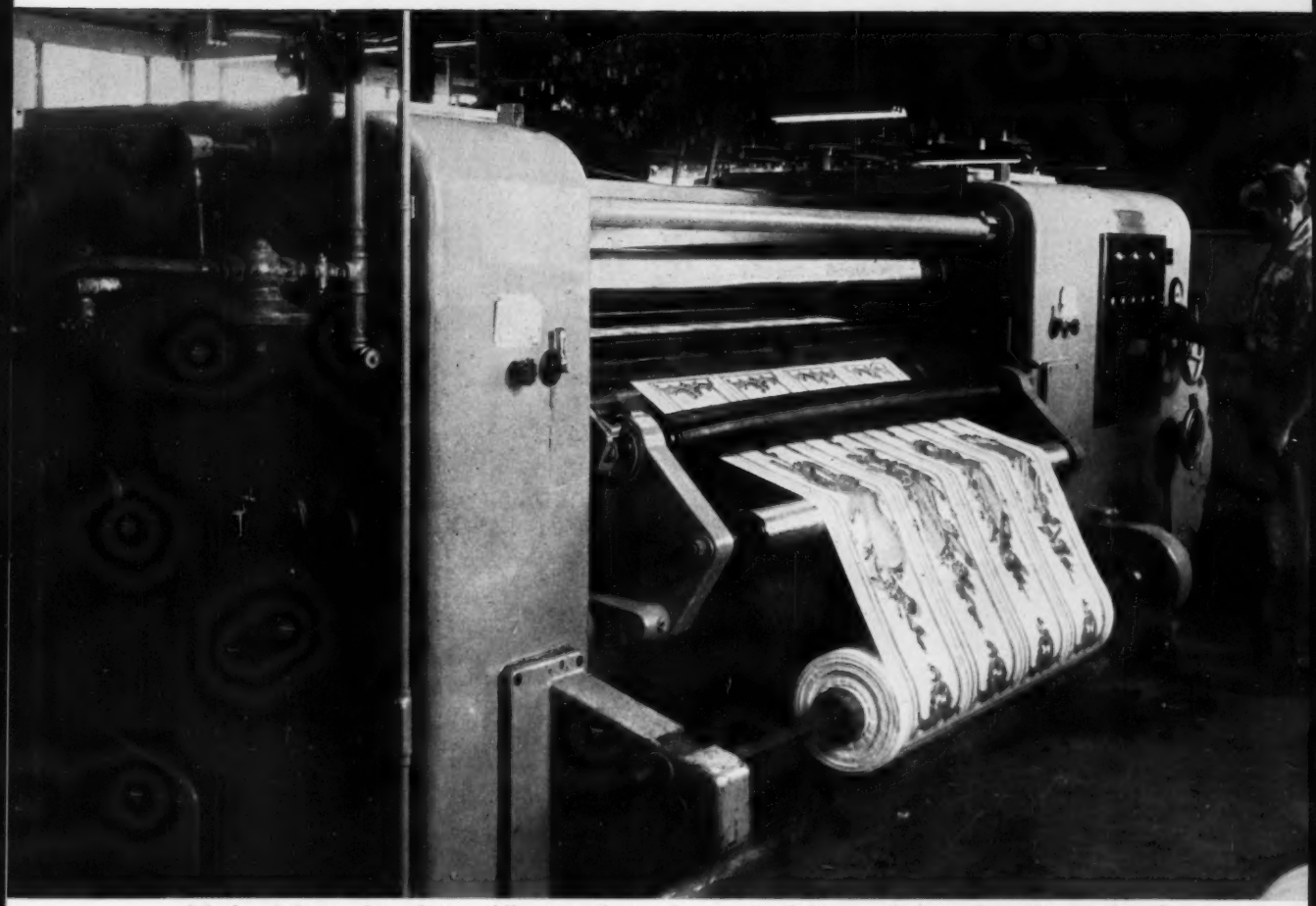
flash aging are closely tied together. Print pastes must not only meet the requirements of printing, which change with pattern design and fabric texture, but also the stringent demands of flash aging.

Most print pastes are based on a modified locust bean gum formulation to which may be added starch products for higher color yield. Besides producing good definition in printing, the paste film must aggregate in the caustic-hydrosulfite bath in order to preserve sharpness of printed outline. But at the same time, the film must be sufficiently permeable to allow wetting for subsequent reduction-fixation.

Stonehenge selects vat colors first for fastness properties, then

Resin finished fabrics are first framed to width and batched on a tenter frame, which is in tandem with padding and drying equipment for continuous operation, if necessary. Tenter frame runs under elevated curing range (in background)—an arrangement that saves space.





Calender of German design features different speed ratios for normal and friction calendering. Top roll is gas heated.

for their ability to reduce quickly, and for their affinity for the cellulose fiber in the leuco state.

Some fine points of flash aging process are worth mentioning to point to its exacting nature. There are limitations on caustic concentration, for example. While higher concentrations tend to increase the reduction rate of most dyes, they also tend to slow down fixation. And the amount of wet pick-up must be properly adjusted to the fabric, for an excessive amount of padding liquor can cause "flushing" during aging.

In Stonehenge's arrangement, the printed fabric is run face down through the reduction bath between a top roll of rubber and a bottom roll of steel that is highly polished to prevent color build-up. The fabric then passes into the steam chamber with only a short air contact between padder and mouth of steamer. Aging and fixation take place in up to 30 seconds, depending on reduction rate of dyes, their affinity for the fiber, and their exhaustion rates.

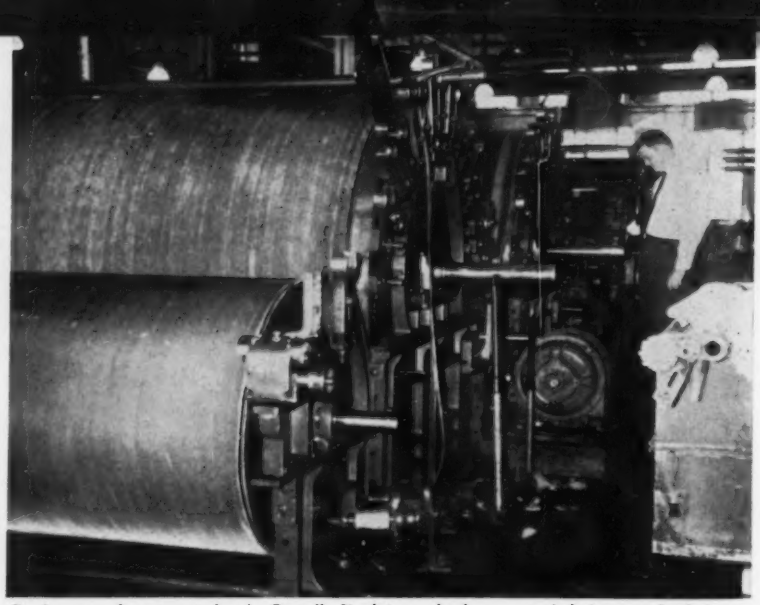
After steaming, the fabric is given a cold-water rinsing and is developed in a peroxide bath. After two successive soapings in becks, the fabric is opened and dried for finishing.

Modernization Continual. Although Stonehenge looks upon its plant facilities as being modern, and many pieces of equipment, such as the Dornbusch calender, afford flexibility in processing, modernization is a continual program. As a pioneer of mechanized screen printing in this country, Stonehenge has stayed abreast of new developments in this field, and its current plans include installation of even faster printing equipment now being made available by Buser.

Though it has not been mentioned, the highly technical processes which characterize the Stonehenge plant, from screen printing to flash aging and resin finishing, could not be carried out without a large staff of specialists. Stonehenge's plant staff includes an experienced mechanical engineer whose sole duties are maintenance responsibilities for the Buser machine; and colorists, chemists, and practical plant men to round out the staff. Together, they maintain the top quality printing standards at a high rate of productivity.

Stonehenge's plant, a one-story structure of U-shaped design, lends itself to further expansion—a possibility that had not been overlooked when the company was founded.

Supervisor of stock room, Culmer Wood, inspects a redesigned porous-bronze bearing.



Card room department head, Carroll Singleton, checks on card being overhauled. As experience was gained, time to overhaul a card was cut from seven weeks to ten days.

Conrad Adkins, head spinning room overhauler, inspects an installation of nylon bearings.

Bobbin reconditioning. Single spindle spins bobbin while operator removes nicks, burrs, etc., with abrasive materials.

Wool mill

Birth and development of preventive maintenance at Chatham Mfg. Co.

by Clyde A. Hall
Technical Superintendent
Chatham Manufacturing Co.

Exclusive

ABOUT four years ago the officials at Chatham Manufacturing Co., Elkin, N. C., decided to scrutinize major cost areas for the purpose of establishing a cost reduction program. Maintenance, as one of these major cost areas, was studied with the idea of exploring maintenance systems other than the departmental fixer system common to most textile mills.

First, the requirements of an ideal maintenance system were set forth, together with the advantages of such a system. Assuming that the ideal maintenance system would keep production machinery in top condition, it was obvious several important savings should accrue:

1. Less downtime—more production
2. Better quality
3. Less waste
4. Higher machine speeds

Increased complexity of production since the war required that more of the fixers' time be spent on making adjustments to produce a greater variety of fabrics. Since the fixers' time was consumed in this type of work they did not have time to perform mechanical maintenance.

Faced with the inevitable long-range prospect of reduced mechanical maintenance, and convinced of the savings to be realized from an ideal maintenance system, management gave its sanction to the development of a new maintenance program designed to be as near the ideal as possible. Since mechanical maintenance seemed logically to be a function of the engineering department, the plant engineer was assigned the job of developing an organization to perform this function.

Organizing the Program. The preventive maintenance program

The first spinning frame required 21 days to overhaul; now a much superior job is done in 5 days. Among advantages accruing in the spinning department: development of ring lubricating system, 10 per cent lower power requirements.

maintenance grows up

was set up to perform four separate functions: (1) overhauling, (2) inspection and checking, (3) lubrication, (4) supply parts inventory.

The first step was to organize an overhaul crew in the worsted plant, which had been in operation for only three years. A crew of four carefully selected men was assigned to the job of completely dismantling each piece of machinery and rebuilding it to as nearly a new machine as possible.

Work was started on the twisters and the manufacturer was consulted and asked to furnish his best erector to aid in this work. Under his guidance at least two machines were completely torn down and rebuilt replacing every worn part.

When it was felt the men were thoroughly familiar with this type of machine they continued without the erector until each twister was given the same careful overhaul. This was done for each different type of machine—first under the guidance of a competent erector and then alone.

In the worsted division, where this program was started four years ago, a 30% saving is now being realized in maintenance labor. The machinery is in good mechanical condition, and quality and production have benefited greatly. The down-time due to mechanical failure is at an all-time low, and a considerable saving is noted in parts and supplies, which also are at an all-time low by 30%.

Another service of the maintenance department is performed by the Strobotac operators, who are continually checking spindle speeds in the worsted division and wool spinning department. Speed of each spindle is checked and plotted on a graph. A copy of the graph is sent to the department head concerned. The graphs are summarized and records kept so that progress can be noted and corrective measures taken when necessary.

Maintenance Controls Stock Room. Early in the program it became apparent that if this work was to proceed efficiently, it would be necessary for the maintenance department to have control of the stock room so that work would not be held up because of lack of supply parts. Consequently, the stock room was assigned to the maintenance department.

Each part that needed replacing during overhaul was studied carefully to determine the cause of wear or failure. It was apparent that lubrication was at fault in many instances, so a lubrication engineer was added to the maintenance department. In addition to specifying lubricants he actually supervised the oilers in order that lubrication cycles could be established and adhered to.

Oilers were also given the task of inspecting and were required to turn in daily check sheets on machines lubricated, listing all points which gave evidence of wear or which needed attention.

Records. Overhaul forms were made for each type of machine and were used to record motor loads before and after overhaul, misalignment found in spinning frames and twisters, parts replaced, and man-hours for overhauling.

Gradually these records, together with oilers' daily reports, brought to light repetitive trouble spots. Oilers' reports also served to check the effectiveness of over-

OVERHAUL RECORD

MACHINE No. 19 Card Condenser

OVERHAUL PERIOD April 13 - 24, 1959

PARTS USED

BIN No.	AMOUNT	PART NO.	PRINT NO.	DESCRIPTION
9115	2			Spool Drums 6 1/2" x 29 1/2"
547	1		114	Waste End Drum Driving Gear
2701	4	701		Gibs, Style A
725	1		115	Internal Drum Driving Gear
2770	1	B2016-OH		Needle Bearing
1612	1			Sprocket 15T, 5/8" P, 3/8" B.
641	1	576X-82	97	Bracket Stud
383	1	C30-38		Sliver Guide
2134	5			Wood Bushing
1834	2	C38-379	149	Sprocket
555	2	C38-299		Apron Roll Carrier Bearing
1955	1	C38-286	140	Driven Pulley Bushing
638	1	583W-21		Driven Pulley Stud
645	1	576N-22	78	Driving Sprocket Stud
1836	1	C38-378	63	Driving Sprocket
555	1	556W-31	85	Belt Tightener Pulley Stud
1182	1			Gear 27T, 10P, 7/8" B.
1537	1	C38-736		Main Drive Gear Guard, L.H.
702	1	2C38-691	229	Top Idler Pulley
2072	1	C13-69		Gear Guard Bracket
1013	1	C38-676	196	Spool Drum Drive Sheave
	4'9"	4" H.S.		Belting
	2'5"	3 1/2" H.S.		Belting
10421	1	576N-54	146-2	Eccentric Shaft - Mirralloy Steel
2052	1		635	Bottom Eccentric Shaft Bearing Cap
1001	1	C38-89	306	Eccentric Disc Plate
1115	1	C38-395		Eccentric Bearing
459	1	553B-5		Intermediate Gear Stud
1030	1	C35-143		Wipe Roll Bracket, R.H.
1056	1	C38-419		Doffer Drive Gear Guard, L.H.
	8'3"			Flexible Hose 1 3/8"
	2			Roving Guides
1011	1	1C38-874	212	Carrier Bracket Link
1056	1	C38-419		Doffer Drive Gear Guard, L.H.
11127	4	Sou. Rub.		Rub Aprons

TOTAL MAN HOURS:

110 Hrs. Overhaul Crew

34 1/2 " Machine Shop

144 1/2 HRS. TOTAL

COPY TO Mr. Claude B. Hart
Mr. Eugene Powers

hauling and to point up items to be given special attention in future overhauls.

Regular weekly meetings were held with the overhaul crew and oilers to discuss job methods and the machine components which were giving the most trouble. Some of these troubles were eliminated by a change in lubrication technique and some needed redesign. A draftsman was assigned to the maintenance department to make drawings of redesigned parts.

After all machinery had been overhauled once, the crew immediately started the overhauling cycle again. The second time, parts replacement was greatly reduced and machines were found to be in alignment and level, while experience of the overhaulers reduced the time required to overhaul each machine.

With the knowledge gained from the second overhauling, tentative time cycles between overhauling were established for each of the types of machinery. In subsequent years these time cycles have been lengthened as more experience has been gained and machinery has progressively been found in better condition.

Long before the program at the worsted plant had reached its present level, results were sufficient to justify the new maintenance program, and overhaul crews were started in other departments.

Wool Spinning. The wool spinning department was next on the program, and the same basic principles were used. The first spinning frame required twenty-one days to overhaul. A much superior job is now being done in five days. All frames have been completely overhauled once and 75% of them a second time.

Additional advantages accruing from the program of overhauling and maintenance in the spinning department are: the development of a ring lubricating system; extensive use of nylon and oil-impregnated, porous bronze bearings which have reduced the lubrication time 50% and in some cases completely eliminated lubrication; 10% less power used, because of the freer running machines. Electrical service calls show an 80% reduction.

This has been accomplished by the electrical department using the same type of program on the electrical equipment at the time a machine is being overhauled. Other dividends are less ends down, better quality, more uniform bobbin sizes, larger packages, less waste, less variation in twist, increased production, and reduction in overhead.

*Wool Carding.** The next department that came under this program was the card room. This was a larger operation with heavier machinery, requiring a larger crew. The machinery was older and consequently was in greater need of repair.

Here again, progress was slow at the beginning, but as experience was gained the time to overhaul a card was cut from seven weeks to ten days. Fifty-one of the sixty-one cards have been overhauled.

The results are even greater than those in the worsted division. Practically all sleeve bearings have been redesigned to use oil-impregnated, porous bronze bushings. The lubricating cycle was extended from eight hours to thirty days.

Production is up by 10% because of increased speeds and reduced down-time due to mechanical failures. Waste is at an all-time low.

Other Departments. In addition to the departments already described, the preventive mainte-

(Continued on page 135)

*See "Keep Woolen Cards Running," TEXTILE INDUSTRIES for July, 1957, pages 95-96.

Battery filling streamlined

These tips, plus quill trays at looms, nearly doubled battery fillers' efficiency

by C. H. Ash
Exclusive

HERE IS a series of informal instruction tips which we prepared and use at our mill to help battery fillers do their jobs better. These tips are included in a brochure which we have given to all our battery fillers.

Our campaign to increase the efficiency of battery filling has really paid off—our job load has been increased from a basis of 590 quills plugged per hour to 867. The increase was brought about by stocking quills in trays on the loom, as well as by instructing battery fillers in more efficient methods.

On most of our looms we have mounted on the loom arch a flat tilted rack which accommodates two fiberboard trays, one behind the other. The battery filler switches the front tray to the back when it becomes empty, and slides the full tray from back to front.

This arrangement is neat in appearance, and has also proved satisfactory for the girls who refill the empty trays.

Are you a Whirly Bird?

A whirly bird is a very fast battery filler—so fast that she can take time to wrap each separate end around the battery knob. She can also wrap each end around the knob at least ten times.

This tends to wear out a battery filler very quickly, and is not recommended for anyone except those trying to get their pitching arms in good shape for the girls' softball team. In that case—just keep winding away.

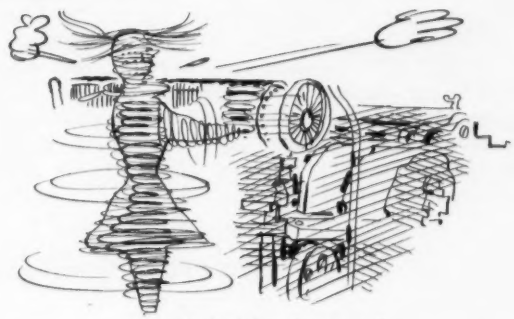
For those who want to conserve their arm bones for those big jobs at home, there are a few things that can be done to help:

Plug one quill in the battery. Lay the end over the battery knob. Plug another quill; lay that end over.

If you are filling on 24s yarn you may plug and lay over as many as eight quills before wrapping the ends around the battery knob and breaking. On 4s/2 you can't break many ends at one time, but even two ends wrapped as one will save you a lot of arm motion.

Try this prescription—wrap several ends at once. It's guaranteed to help.

Once, twice, three times around the battery knob is enough. Count the number of times you are now wrapping an end around the knob. If you're wrapping



Whirly bird (too fast to see).

six times instead of three, you are moving your arm through a distance in a year's time of 1,000 miles more than you need to. In one year you have logged as many extra miles as you would on a trip from Atlanta to Boston.

If you have bought a new car lately you know it's not so much the base price of the car that's unreasonable—it's all the extras that put it out of sight. So if you think that your job is out of sight, watch those extras. And extra winding is one of them.

Are you a Triple-Plugging-Two-Miler?

A triple-plugging-two-miler is one of the very best battery fillers. So good, in fact, that she can run about two extra miles a day keeping up her job. A triple-plugging-two-miler catches a battery when only three quills can be plugged.

If you are plugging only two, three, or four quills to a loom, and are not in training for the Olympics, there are ways and means to reduce your walking—or running—time by one-half:

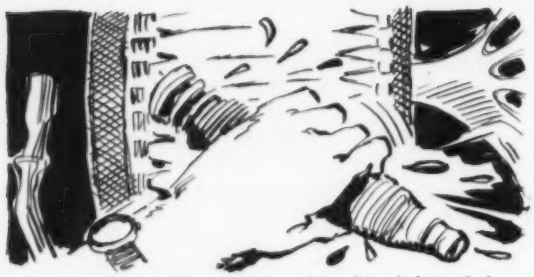
Learn to pace your job so that each visit to the loom will require that you plug at least seven quills to fill the battery. It's simple arithmetic to see that plugging only three quills each visit will double your walking time, since you must make twice as many trips.

So to keep those additional miles off your speedometer, plug more quills each visit to a loom.

A triple-plugging-two-miler hits the finish line.

(Continued next page)

Are you a One-Grabbing Quill Squeezer?



A one-grabbing quill squeezer caught red-handed just before squeezing in that last quill.

A one-grabbing quill squeezer could run anybody's job, anywhere—she is that good, that fast, and that strong. A one-grabbing quill squeezer reaches in the tray or box and picks up one quill each time, all day long—only one, day in and day out. And she squeezes that last bobbin up, under, around, and in between, until it finally slips into the battery.

A one-grabbing quill squeezer needs extra-strong back muscles and left arm muscles for all of those extra motions used in reaching into a tray to pick up no more than one quill.

If you are picking up just one quill at a time and at the end of eight hours feel as though a herd of wild elephants had run over you, not once but several times; if you are sure that somebody made a mistake in figuring your job and that you should have at least 40 fewer looms, there is some help for you.

If you have been picking up one lonely quill at a time, picking up two will cut in half the number of reaching motions that you will make in a day. It has been proved time and again in other plants that picking up two or three quills, when the proper techniques is used, is actually faster than picking up one. It's slower at first, but just a few hours practice should convince you that it can be done.

Stay with it, don't give up; once you get the knack of it there's not a possibility that you'll ever return to picking up one quill at a time.

Putting that last quill in the battery—the one that you have to squeeze in while standing on your head —takes twice as long as plugging a quill at any other point. Forget this last quill—move on to the next loom, where you can have two quills plugged in the time it takes to pry that last one in.

Are you a Back-Tracking Loom Jumper?

Back-tracking loom jumper in action—look out!

Back-tracking loom jumping is actually a not-so-rare disease. This malady occurs when a battery filler has some very coarse numbers sprinkled in her job. These coarse numbers tend to cause batteries to roll, which gives secondhands the evil-eye look.

In order to keep the battery from rolling, a battery filler will jump over several looms, swing across humidity pipes, and slide several hundred feet on a slippery floor to reach that loom before it begins to roll.

Coarse numbers *are* problems, but other things happen in connection with these very coarse numbers which may increase the difficulty of the job:

The next time that you have a coarse number (2½s, 7½s/3, 4s/2, or similar counts) on your assigned looms, watch how you backtrack. If you are backtracking and stopping along the way to plug a bobbin here and there, or if after you have filled the battery of coarse filling you are not returning directly to your starting point, you are probably greatly increasing the size of your job.

When the time comes to return to a loom with very coarse filling and you have just filled loom No. 262, for example, and the next loom to be filled is No. 263, go directly to the coarse number—say, loom No. 280.

Do not stop along the way to put two quills in loom No. 272, three quills in No. 276, etc. Fill loom No. 280, then return directly to your starting point and fill loom No. 263. *Keep on the same path throughout the day.*

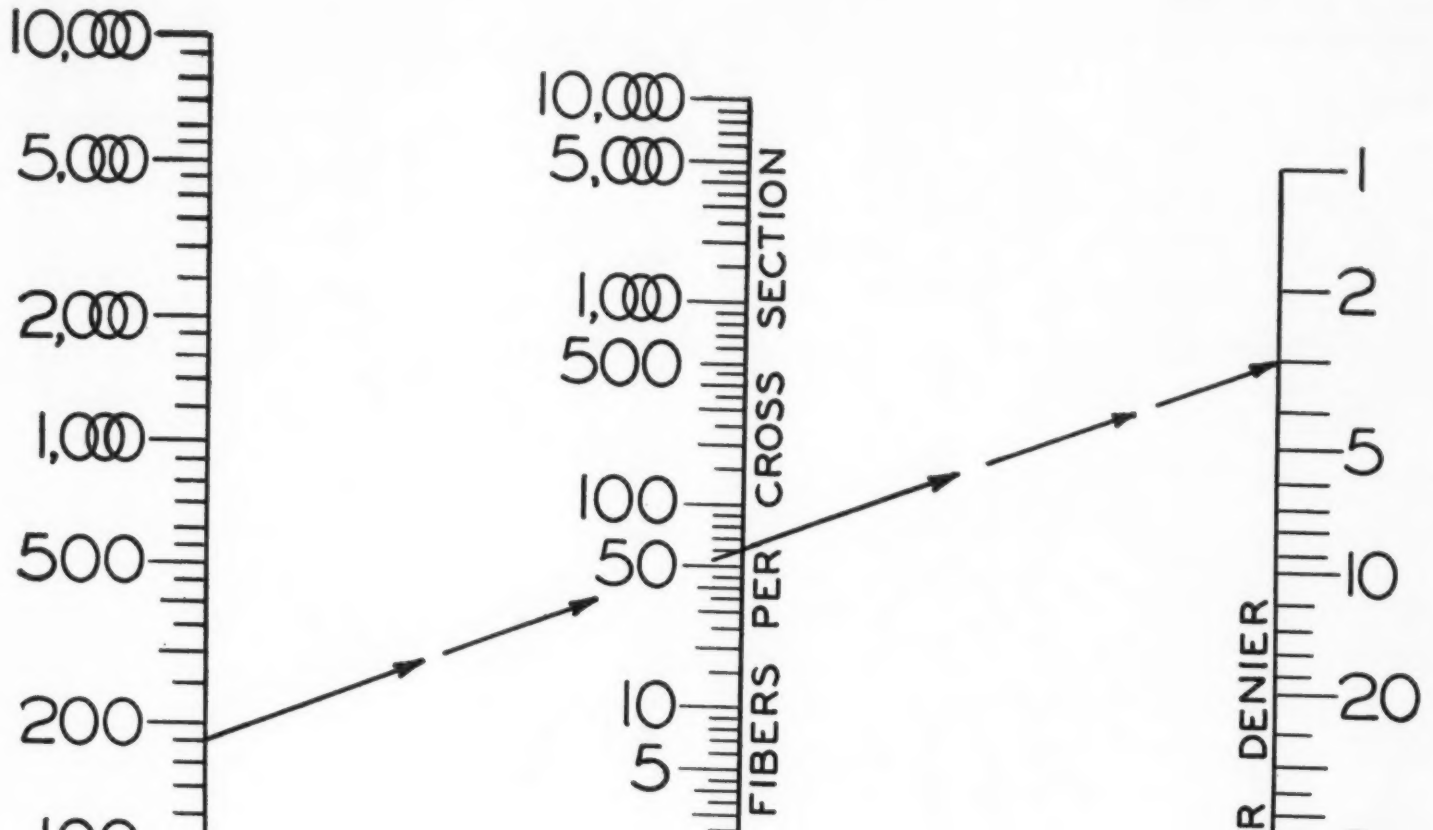
Beware of back-tracking—it is a dangerous disease once it gets you down. It causes tired and aching arms, legs, and feet; and it gives you that woebegone, eyes-bloodshot, don't-care feeling that penicillin can't help.

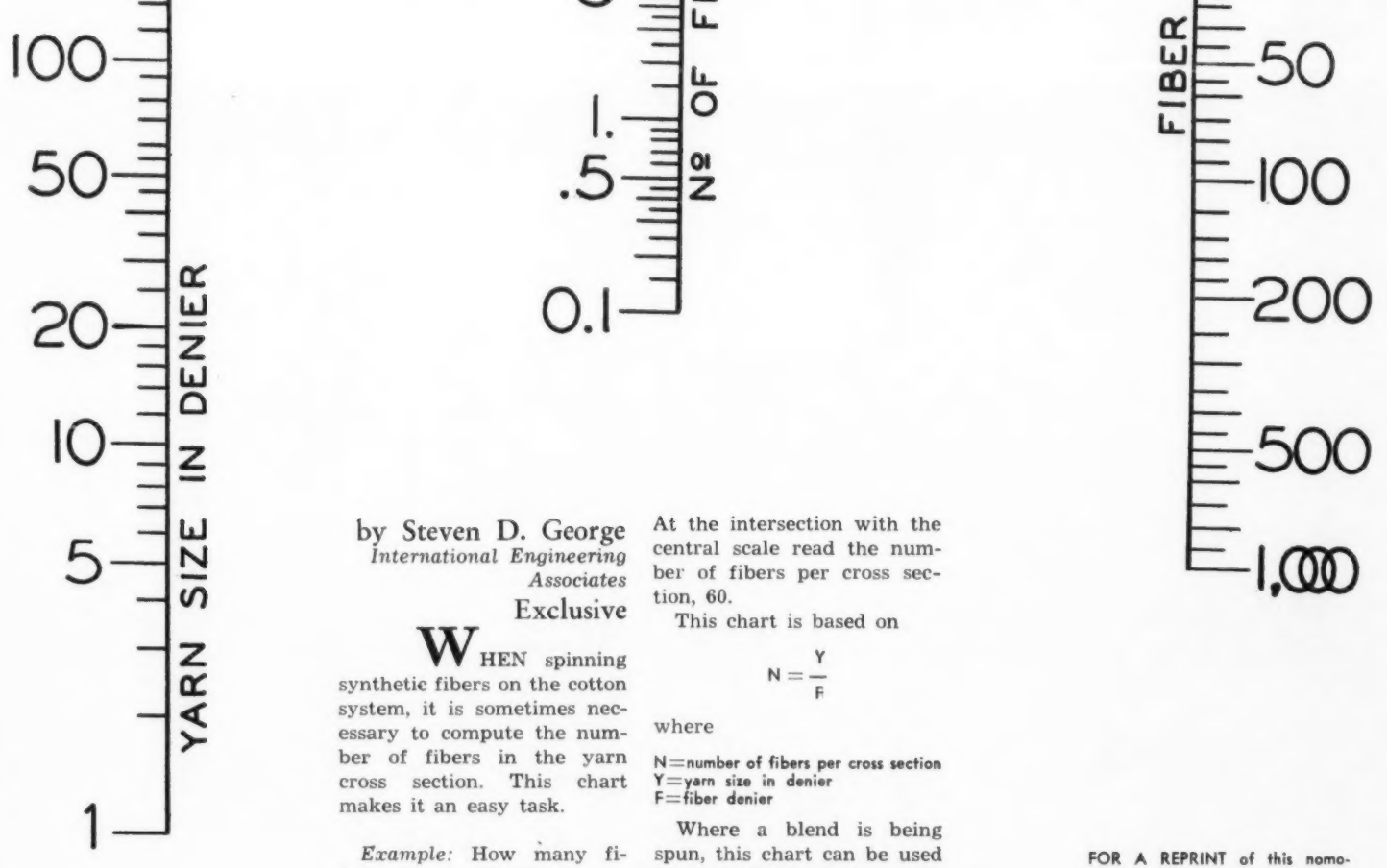
For a most efficient method of filling batteries, see this poster

For reprints, write the editors

Tear along this line to post in mill.

How many fibers per yarn cross section?





by Steven D. George
International Engineering Associates

Exclusive

WHEN spinning synthetic fibers on the cotton system, it is sometimes necessary to compute the number of fibers in the yarn cross section. This chart makes it an easy task.

Example: How many fibers per cross section are there in a 180-denier yarn equivalent if the staple is 3 denier?

Solution: Enter the chart on the left at the yarn size in denier, 180, and draw a straight line through the fiber denier, 3, on the right. At the intersection with the central scale read the number of fibers per cross section, 60.

This chart is based on

$$N = \frac{Y}{F}$$

where

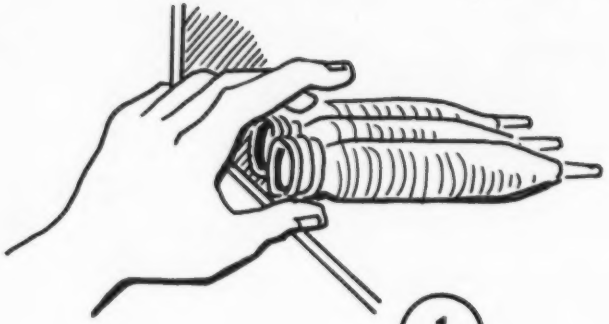
N=number of fibers per cross section
Y=yarn size in denier
F=fiber denier

Where a blend is being spun, this chart can be used to compute the number of fibers in the yarn cross section if the yarn denier is multiplied by its percentage in the blend before the chart is entered. Solve as above; add the number of fibers of each component to obtain the total number of fibers in the yarn.

FOR A REPRINT of this nomogram, write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Georgia. Requests will be honored as long as the limited supply lasts.

LOOK, BATTERY FILLERS...

It's easier this way



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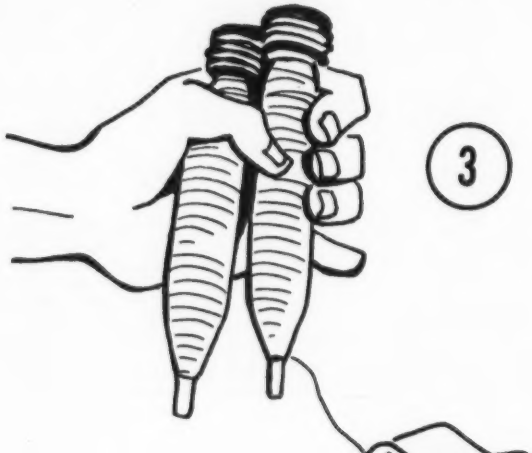

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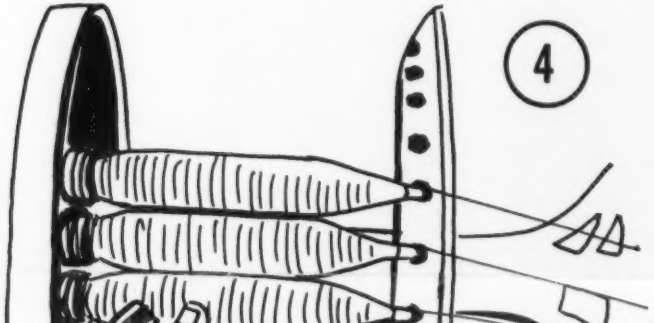

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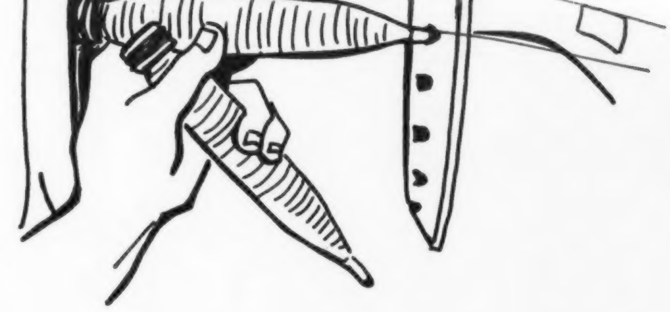
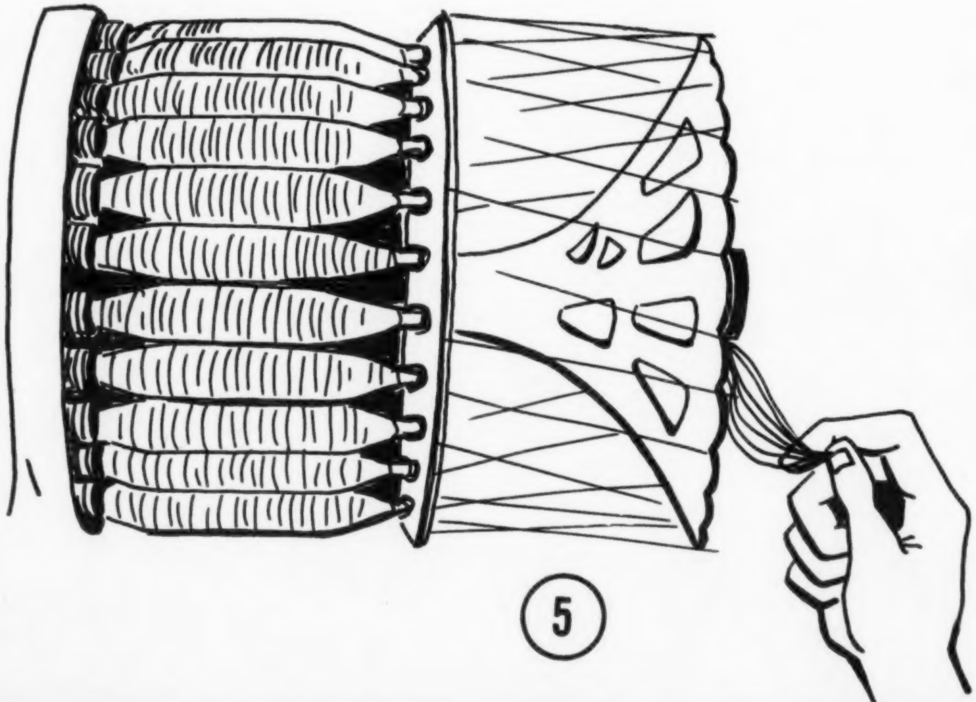


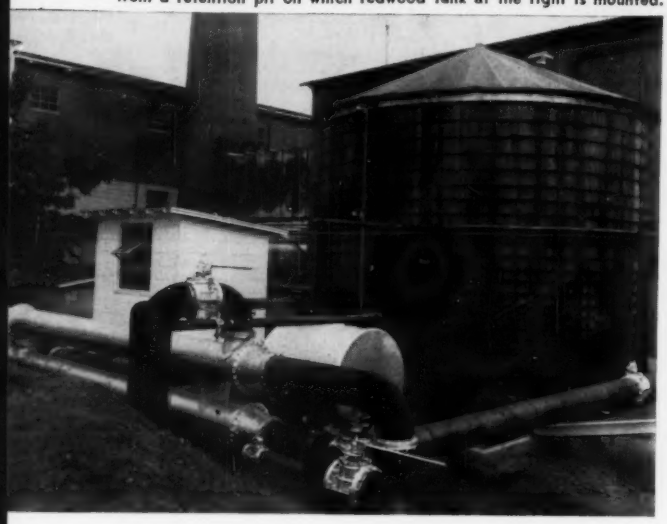


THE 5 STEPS

1. **Reach into tray**
2. **Grasp 2 quills**
3. **Break tails,**
   pull off ends
4. **Plug quills,**
   lay ends over knob
5. **Wrap several ends**
   around knob 3 times

Tear along this line to post in weaving department. For reprints, write The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Heat exchanger is located at rear of the boiler plant. Covered pipe in right foreground leads from pumps which feed waste to exchanger from a retention pit on which redwood tank at the right is mounted.



The heat recovery system installed by this plant is the equivalent of an additional 30,000 *to* 35,000 *pounds of steam per hour*

"We stopped wasting hot water"

by W. B. Etters
Chief Industrial Engineer
Reeves Brothers, Inc.

Exclusive

THERE IS a potential saving of from 25% to 30% of the total annual fuel cost for the textile industry, which aggregates approximately $100,000,000. With such potential saving from possible heat recovery, an economic study of waste water was initiated at Fairforest Finishing Division of Reeves Bros., Inc., during the winter of 1956.

As a result of a heat reclaimer installed, this plant has the advantage of the equivalent of 30,000 to 35,000 pounds of steam per hour, in the form of a 75,000-gallon continuous supply of incoming process water at 110-120 F. Further, this saving in equivalent steam has effected a reduced cost of process steam by lowered input per hour in both fuel and man-hours in the boiler plant.

With an objective of cost reduction through elimination and minimizing of all processing materials and costs, we were confronted with the problem of inadequate process steam supply at this plant. There are open-width scouring machines, kiers, continuous bleaching ranges, chain and chainless mercerizers, open-width soaping and washing ranges, jig and range dyeing units in the several processing areas of a dyeing and finishing plant such as Fairforest. They utilize hot processing techniques, and thereby create as overflow or waste a considerable stream of hot effluent as a source of recoverable Btu's.

Many of these processes are performed with liquors and washing temperatures exceeding 180 F. The apparent cost reduction possibilities of heat transfer equipment convinced us that the losses being suffered by short steam supply, with its inherent high costs due to lowered operating efficiencies from inability to process or dry at top speeds, could be reduced with adequate means of reclaiming Btu's from waste effluent.

Accordingly, after complete economic study, top management was presented with a proposal covering installation of a system of reclaiming millions of Btu's from waste effluent by transfer of heat from waste water to fresh process water. Our proposal designated

This view of the heat exchanger shows the main control valves in the heat recovery system.

The entire heat recovery system is automatically controlled from central panel board.

the condition of steam shortage and recommended the acquisition and installation of an appropriate system of heat recovery. This would reduce overload on boilers and cut processing costs by providing higher efficiencies in processing flows, with improvement of finishes and over-all quality.

The design and exchange capacity of this unit were based on fresh and waste water flow rates taken from recordings by calibrated flow meters over a period of six months.

The proposal was approved, and the order for equipment was placed during September, 1957.

Equipment. The heat exchanger consists of two mild steel shells, each containing a concentrically grouped cluster of type 304 stainless steel tubing. The connecting U-bends are of an original design, for which a patent has been applied, and provide for constant velocity of waste water flow through the tubes. This eliminates any pockets of comparative stagnation where lint or contained sediment may accumulate to restrict flow rate or completely block the hot waste effluent.

A four-way valve, actuated by a controlled air cylinder timing device, causes a periodic reversal of waste effluent flow direction through the exchange section. This backflushing action dislodges any form of deposit, thus insuring against sizable deposits which could interfere with proper passage through the unit.

The installation was put into operation during April, 1958.

Operation. The installation is designed to recover heat from waste water and from steam condensate flash. In addition, it incorporates complete recovery of heat from our caustic recovery system when it is in operation.

Our entire hot water and heat recovery system is automatically controlled from a central control room. Should any condition deviate from standard, simple instruments immediately relay an alarm to the boiler house and the attendant there can investigate at once.

The waste water heat reclaimer itself is of non-clog design, and although it is fed with our entire plant effluent it has not had a single tube plug up in over nine months of operation.

High velocity of waste water through the tubes inhibits slime and scale formation, so the reclaimers operate at near-new efficiency without prohibitive cleaning cost and down time.

The heat exchanger is located next to the other components of the system, which are a 40,000-gallon cement waste-water retention pit which also serves as a base and foundation for a 75,000-gallon redwood hot water storage tank from which our in-plant hot water piping system originates.

Textile research conference set for July in New Hampshire

■ THE TEXTILE portion of the 1959 Gordon Research Conferences is scheduled for the five-day period, July 13-17, at Colby Junior College in New London, N. H.

Dr. Leonard Smith of the National Cotton Council will serve as chairman, and Fred Fortess of Celanese Corp. of America will be vice-chairman.

The conference will begin on Monday morning, July 13, with Harold P. Lundgren leading the discussion on new findings in wool structure, stability, and modification. Also on that day the relationship of polymer constitution and fiber structure to fiber physical characteristics will be dealt with under the direction of Sheldon Sprague.

On Tuesday, July 14, phenomena associated with cross linking of cotton cellulose will be considered under the guidance of V. W. Tripp and Fred Perkerson. Richard Steele and John L. Gardon will lead a forum on chemical control of crease recovery and wash-wear effects in cellulose fibers.

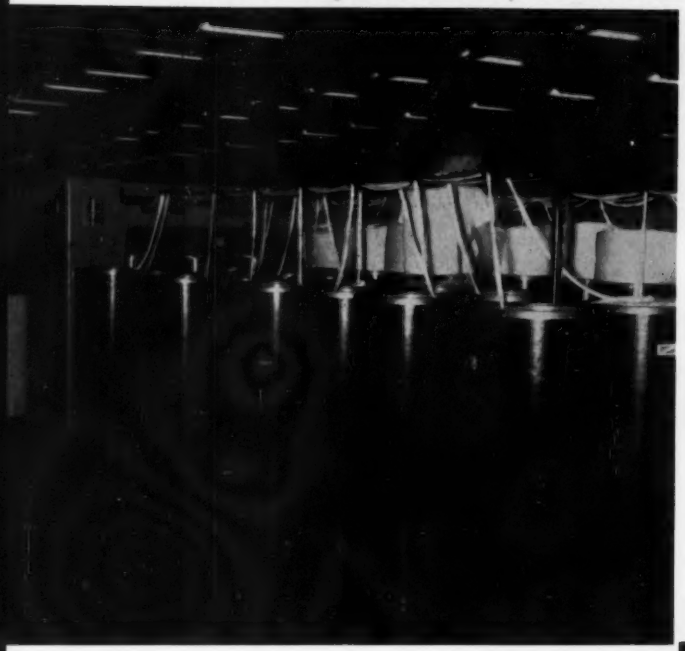
Interfacial polycondensation (under E. L. Wittbecker), interfacial spinning (under E. E. Magat), and Kodel polyester fibers (under E. V. Martin) will be considered on Wednesday, the 15th.

Joel Lindberg will present for discussion on Thursday, the 16th, the measurement of mechanical properties and prediction of fabric performance. Also, Dewitt R. Petterson and Stanley Backer will lead a conference on the mechanics of non-wovens.

The concluding session, on Friday, will be devoted to consideration of stress strain relations in yarns subjected to high speed impact, with Jack C. Smith as leader.

Requests for attendance at the conferences, or for additional information, should be addressed to W. George Parks, director, Department of Chemistry, University of Rhode Island, Kingston, R. I. From June 15 to September 4 mail should be addressed to Colby Junior College, New London, N. H.

Breaker drawing and finisher drawing have 8 ends up; 18 X 42 card cans and 16 X 42 drawing cans hold about 40 pounds of sliver each.



72 deliveries replaced 176

They produce better quality work, occupy less floor space, require less labor

Staff prepared—Exclusive

THIRTY-SIX deliveries of high speed breaker drawing and 36 deliveries of finisher drawing operating at 300 feet per minute produce the same poundage as 176 deliveries of conventional drawing which was replaced in one prominent southern mill.

The mill now operates a total of 72 deliveries of drawing which occupy less floor space, produce better quality work, and require about 40 per cent less labor to operate than the old conventional frames.

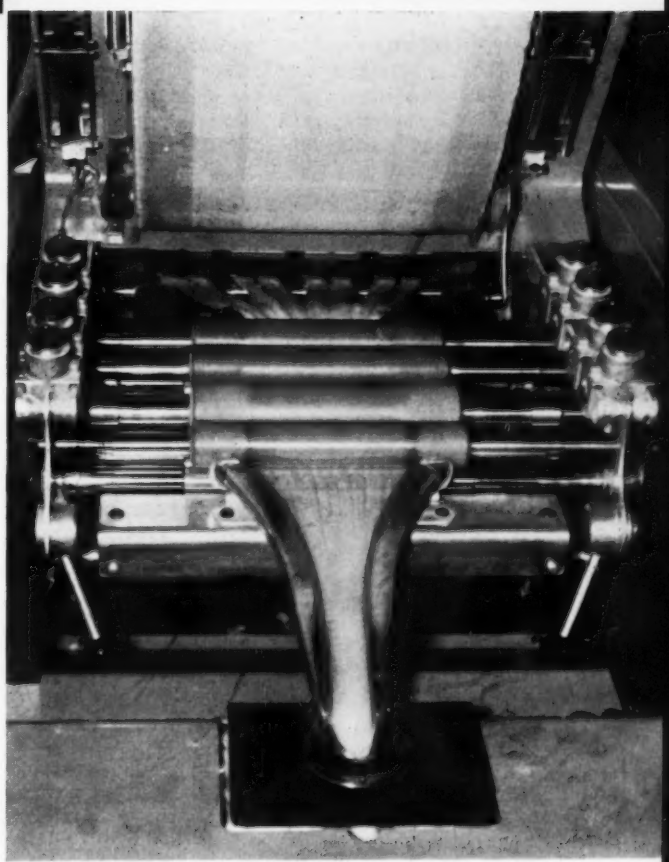
Card coilers and cans were changed to 18 x 42 size, and drawing cans are now 16 x 42. The card cans hold about 40 pounds of stock, and the drawing cans about the same amount.

Sliver uniformity variation improved an average of 25 per cent, with a corresponding reduction of ends down in both roving and spinning. Yarn variation also reflected the improvement.

Piecings were reduced by about 60 per cent on card sliver and drawing sliver as a direct result of the change to larger cans. The 50 per cent reduction in floor space requirements for the drawing frames was also noted as an important advantage by mill officials.

The old drawing operated at 120 feet per minute and used 12 x 36 cans. Formerly, there were four sliver lappers, 80 deliveries of lap-back drawing, and 96 deliveries of conventional drawing with six ends up making carded cotton stock for print cloth.

The need for quality improvement and cost reduction were given as the major reasons for the change.



The four-over-five system of drafting is utilized, as may be seen in this close-up photo of the drafting element on one of the new frames. About 300 feet of sliver per minute are delivered. Top and bottom rolls are equipped with antifriction bearings, with pressure applied to the top rolls by springs. Note the plastic antifly cover on the trumpet channel; also the static conductor underneath which is a part of the revolving apron type underclearer.

What spinning draft does

by Jack Simpson and Charles L. Sens

Southern Regional Research Laboratory[1]

Exclusive

AN understanding of the effect of spinning draft on such yarn properties as strength, uniformity of weight per unit length, and elongation of short, medium, and long staple cottons is extremely important to the cotton spinner and breeder. A knowledge of the effect of draft on coarse, medium, and fine yarns from both single and double rovings over the complete range of the drafting system being employed would enable the spinner to select a draft which best meets his requirements with respect to production, cost, yarn strength, and quality.

It would also aid the spinner in selecting particular cottons that best fulfill his cost and quality requirements and would aid the breeder in that his selections of experimental cottons could be guided by the effect of spinning draft.

Phases of the problem on the effect of spinning draft on yarn properties have been reported by others. Fiori (5)[2] found that an increase in spinning draft from 12.60 to 25.20 on the Casablanca[3] double apron system [15.75/1 37.5 tex) yarn from double roving] resulted in a decrease in yarn skein strength. The cotton samples used were Stoneville 2B, 1 3/32″; Wilds 13, 1⅜″ and 1½″; and an unknown variety, 1″ staple.

The data of Cavaney (3) showed that an increase in spinning draft [yarn numbers approximately 17, 24, 35, and 50 (34.7, 24.6, 16.9, and 11.8 tex) from single roving] was accompanied first by an increase and then by a decrease in yarn uniformity.

Studies by Grishin (6) showed similar results with spinning drafts ranging from 5.0 to 27.0 [31.9/1 (18.5 tex) yarrn, single roving, on the Casablanca double apron system]. He also found that the yarn was more uniform from single roving at optimum draft than that from double roving at optimum draft. The optimum draft for single and double roving was 15.4 and 16.6, respectively.

Opinion in the textile industry has long been divided regarding the use of single and double roving. Loveless (7) found that yarn numbers 14/1 through 29/1 (42.2 through 20.4 tex) from a combed cotton of Karnak variety, 1.36″ U-H-M length, and a carded 1-1/16″ staple length cotton were stronger from single than double rovings when the draft using the single rovings was one half that using double rovings.

Charnley (4) found that: (1) the lea strengths of yarn spun from cottons of low quality are affected by spinning draft to a greater extent than those of high quality, (2) the strengths of yarns in relatively low counts are influenced by draft to a greater extent than those in high counts, (3) cottons of similar measurable characteristics but grown in different districts (e.g., the Argentine, Brazil, Texas) gave similar results, (4) for the four cottons tested, yarns spun from double roving were stronger than those spun from single roving with the same draft.

Research (8, 9) at this Laboratory has indicated that for an analytical study of the effect of spinning draft on yarn properties it is very important that the rovings of any specified hank are of optimum uniformity for the drafting systems, roll settings, etc., being employed. It was found that this was necessary in order that the effect of drafts at the processes before spinning could be held at a minimum while the effects of spinning drafts were being examined.

Although the studies mentioned

TABLE I. Summary of Spinning Conditions

Yarn Number C C Tex	Spinning System	Ring Diameter, Inch	Spindle Speed, RPM	Traveler Weight, Grains
	Whitin			
10/1 59.0	Double Apron	2.25	6300	2.000
20/1 29.5	"	2.25	6300	1.000
30/1 19.7	"	2.25	6300	.600
40/1 14.8	"	1.50	8700	.375
60/1 9.8	"	1.50	7700	.300
70/1 8.4	"	1.50	7700	.250
	Saco-Lowell			
10/1 59.1	Single Apron	2.25	6300	2.000
20/1 29.5	"	1.75	6300	1.000
30/1 19.7	"	1.75	6300	.600
40/1 14.8	"	1.75	8700	.375
60/1 9.8	"	1.75	7700	.300
70/1 8.4	"	1.75	7700	.250

[1]One of the laboratories of the Southern Utilization Research and Development Division, United States Department of Agriculture, Agricultural Research Service, New Orleans, La.

[2]Numbers in parentheses are references at the end of this article.

[3]Use of a company or trade name by the Department does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.

to yarn

Use these findings to spin better single - roving yarns

► You can lose as much as 35 per cent in yarn strength by using too high a spinning draft.

► You can lose as much as 10½ per cent in yarn strength by using too low a spinning draft.

► Too low a draft at the roving frame results in an economic loss in production.

► In coarse counts, 20s to 30s, choice of the best spinning draft for yarn strength also increases yarn uniformity and elongation.

► The long staple cotton investigated is more sensitive to spinning draft than the short and medium staple cottons; it is also more sensitive with the double than the single apron system.

► Finer yarns can be spun with a given cotton if spinning draft is properly chosen.

► Finer yarns can be spun from short staple cotton when using the double rather than the single apron system.

have been very helpful to the spinner and breeder, there remains a great need for data covering a wider range of yarn numbers, staple lengths of cotton, and types of drafting systems.

This study covers short, medium, and long staple cottons for processing from both single and double rovings over a wide range of drafts on both the Casablanca double apron and the Shaw single apron type SS-2 drafting systems. The Casablanca apron cradle used was the "Type DD-7" with 54-mm width leather aprons. To simplify the reporting, two separate articles will be utilized for presenting the results. This, the first one, deals only with yarns spun from single rovings.

MATERIALS AND METHODS

Test Methods. All fiber properties were determined in accordance with test procedures as outlined by the American Society for Testing Materials (1).

The evenness of the yarns and rovings was measured in terms of a simulated coefficient of variation of weight per unit length with the Uster Evenness Tester equipped with a quadratic integrator. They were tested at a speed of 2 yd/min, which results in a between-length measurement of approximately 0.315 inches and a within - length measurement within a range of 3-5 yards. A total of 20 samples were used for each test.

Yarn tests for number and skein were made in accordance with the American Society for Testing Materials test methods (2). The single strand as well as the elongation at break tests were made on the Uster automatic single strand tester. Ten breaks were made from each of 10 bobbins for yarn numbers below 40/1 (14.8 tex) and 20 breaks per bobbin for yarn numbers finer than 40/1 (14.8 tex), using a 50-mm gauge length with a constant rate of loading and a 10-sec constant time breaking interval.

Processing Machinery and Spinning Systems Investigated. The processing machinery employed prior to spinning was a Whitin two - process picker, Saco-Lowell and Whitin revolving flat cards, a Medley and a Saco-Lowell four-roll drawing frame with cushion-top rolls, and the Whitin 10″ x 5″ Interdraft and 8″ x 4″ Superdraft roving frames.

The spinning frames used were the Whitin Casablanca (double apron) 4.25″ gauge frame for spinning 10/1, 20/1, and 30/1 (59, 29.5, and 19.7 tex) yarns and the Whitin Casablanca (double apron) 3.50″ gauge for spinning 40/1, 60/1, and 70/1 (14.8, 9.8, and 8.4 tex) yarns. The Saco-Lowell SS-2 Shaw (single apron) 3.5″ gauge frame was used for spinning all yarns on the single apron system.

The spindle speeds, ring sizes,

TABLE 2. Samples of Cotton Varieties and Fiber Properties

Cotton Variety	Classer's Evaluation: Length, Inch	Classer's Evaluation: Grade	Fiber Length and Distribution: Fibrograph: UHM, Inch	Fibrograph: Mean, Inch	Fibrograph: Uniformity Ratio, %	Suter-Webb: 25% Point, Inch	Suter-Webb: Mean, Inch	Suter-Webb: CV, %	Micronaire Unit[1]	Strength[2] Index	Maturity[3] %
Unknown	15/16	M	.96	.80	83.0	1.05	.86	30	4.80	7.24	78
Acala 4-42	1-1/16	M	1.08	.86	80.0				4.22	7.97	76
Delta-pine 15	1-3/32	M	1.02	.83	86.0	1.12	.90	33	4.30	7.80	86
Wilds 13	1-1/4	M+	1.30	.79	79.0	1.42	1.16	34	3.90	8.0	92

1 Curvilinear scale 2 Pressley method 3 NaOH method

TABLE 3. Per Cent Coefficient of Variation (Uster) of the Hank Rovings from the Different Cottons

Sample of Cotton Variety	Hank Roving							
	0.50	1.0	1.5	2.0	3.0	4.0	5.0	6.0
Unknown	7.3	7.00	7.30	7.60	7.90	8.50	8.95	8.75
Acala 4-42	5.90	6.45	6.55	6.90	7.25	8.00	7.90	8.25
Deltapine 15		6.12		6.55	6.94	8.02	8.77	9.87
Wilds 13		6.80		6.70	7.0	7.3	7.7	8.2
Mill Standard	5.80	7.13	7.80	8.77	9.83	10.84	11.60	12.25

and traveler weights used in this investigation are listed in *Table 1*. The speeds, traveler weights, etc., were selected from general spinning practice at this Laboratory.

Samples of Cotton Varieties. The samples of the varieties of cottons used in this study of spinning draft from single rovings along with their respective fiber properties are listed in *Table 2*. These cottons were selected to fall into three length groups—short, medium, and long.

Processing Procedure. The processing procedure for the cottons was as follows: The optimum draft allocations prior to spinning were developed for the rovings of these cottons in connection with another study. This study on draft allocation dealt with cottons from different growth areas as well as different staple lengths and will be reported in later publications.

This study on draft allocation prior to spinning insured that each hank roving was of optimum uniformity for that particular hank, machinery, roll settings, etc., thus the effect of drafts before spinning was held at a minimum.

The procedure for determining the optimum rovings was as follows: Several weight picker laps were made and from each weight picker lap 45, 55, and 65 grains/yard (3.19, 3.90, and 4.60 kilotex) card slivers were produced. These card slivers were tested for uniformity and the weight picker lap that produced the most uniform card sliver of a certain weight was selected to produce that weight sliver.

Using a doubling of six, first drawing slivers of 45, 55, and 65 grains/yard (3.19, 3.90, and 4.60 kilotex) were produced from each weight card sliver. These slivers were tested for uniformity and the selection of card slivers was made. This procedure was carried on through roving.

Table 3 lists the per cent coefficient of variation (Uster) of the various hank rovings from the different cottons along with a typical mill standard variation for those hank rovings. In all instances except one the variation of the laboratory rovings is lower than the mill standard.

Using the Deltapine 15 cotton, 1.0, 2.0, 3.0, 4.0, 5.0, and 6.0 hank (590.5, 393.7, 295.3, 196.8, 147.6 and 118.1 tex) rovings were processed. Yarn numbers 20/1, 30/1, 40/1, 60/1, and 70/1 (29.5, 19.7, 14.8, 9.8, and 8.4 tex) were spun from each of these rovings as was possible within the drafting range of the spinning frame. Thus a number of different spinning drafts were employed in spinning each yarn number.

Using this procedure one replicate of these yarns was spun from single rovings on the Whitin Casablanca (double apron) system. After the study on single rovings, a separate lot of rovings was made from the same cotton and another replicate was spun from double rovings.

Tests identical to the above were made using the Wilds 13 cotton. Tests on these two cottons (Deltapine 15, Wilds 13) were then made on the Saco-Lowell Single Apron System by the same procedure as used on the Whitin System.

The experiment on the unknown short staple cotton on both the single and double apron systems was different from that of the other two cottons in that the same lots of roving were used for both the single and double roving tests.

As a comparison with the medium staple Deltapine, the effect of spinning draft was studied on the Whitin Casablanca double apron system with a medium staple, Acala 4-42, cotton. A 0.50 (1181.1 tex) hank roving was made for both the Acala 4-42 and the unknown short staple cotton.

RESULTS AND DISCUSSION

Medium Staple Cottons, Whitin Casablanca Double Apron System. The effect of spinning draft with the Whitin double apron system on the skein count-strength product of yarns from single rovings of the medium staple Deltapine 15 cotton is shown in *Figure 1*.

A decrease occurs in the strength of 20/1 (29.5 tex) and 30/1 (19.7 tex) yarns as the draft increases while the 40/1 (14.8 tex) yarn appears to be little affected by the spinning draft. For 60/1 and 70/1 (9.8 tex, 8.4 tex) yarns there is an increase in strength with increasing spinning draft. However, it appears that the curves for the 60/1 and 70/1 (9.8, 8.4 tex) yarns were leveling off at drafts greater than 25.

The effect of spinning draft on the single strand count-strength product of the above cotton is shown in *Figure 2*. These curves are similar to the ones for skein strength. The single strand strength of the 20/1 and 30/1 (29.5, 19.7 tex) yarns decreases with an increase in draft while that for the 40/1 (14.8 tex) is little affected. The strength of the 60/1 and 70/1 (9.8, 8.4 tex) yarns increases slightly with draft.

A point of difference noted between the effect of spinning draft on single strand and on skein strength is that the relative decrease in strength for increase in spinning draft for the 20/1 and 30/1 (29.5 and 19.7 tex) yarns was greater for the skein than

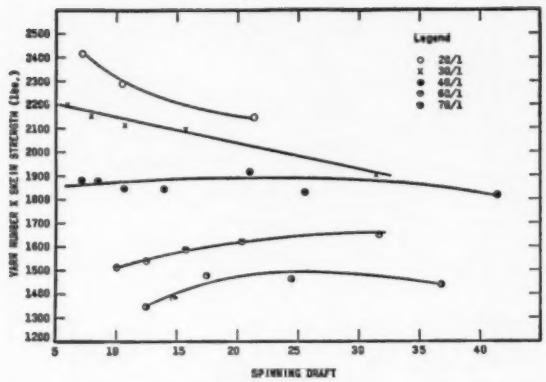


Figure 1. Effect of spinning draft on the skein count-strength product of yarns spun from single rovings of Deltapine cotton on the Whitin Casablanca double apron system.

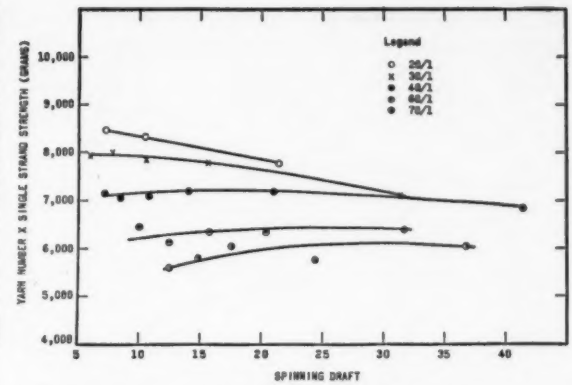


Figure 2. The effect of spinning draft on the single strand count-strength product of yarns spun from single rovings of Deltapine cotton on the Whitin Casablanca double apron system.

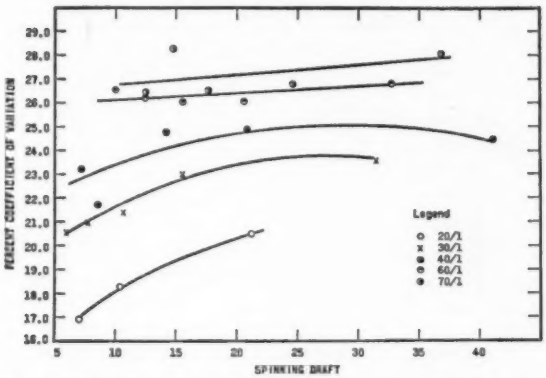


Figure 3. The effect of spinning draft upon the coefficient of variation (simulated weight per unit length) of yarns spun from single rovings of Deltapine cotton on the Whitin Casablanca double apron system.

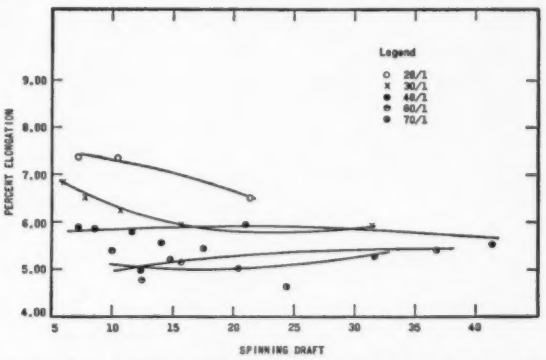


Figure 4. The effect of spinning draft upon the per cent elongation of yarns spun from single rovings of Deltapine cottons on the Whitin Casablanca double apron system.

single strand tests. This was also true for the other cottons of this study.

It is believed that this is due to the nature of the two tests themselves. Weak places in the yarn at relatively wide intervals will influence the skein more than the single strand strength.

Figure 3 shows the effect of spinning draft upon the per cent coefficient of variation (simulated weight per unit length) and *Figure 4* the per cent yarn elongation (at break) of the yarns from the Deltapine cotton. *Figures 1, 2, 3,* and *4* show that for the coarser yarns [20/1 and 30/1 (29.5, 19.7 tex)] a decrease in yarn strength resulting from increasing spinning draft is accompanied by a decrease in uniformity and elongation at break. Due to the variability of the results of 60/1 and 70/1 (9.8, 8.4 tex) no definite relationship is discernible.

The above relationships were also found true for the other cottons. For this reason, only the graphs showing the effect of spinning draft on the skein strength will be shown for the remaining cottons and drafting systems.

The effect of spinning draft upon the strength of yarns from the medium staple Acala 4-42 cotton is shown in *Figure 5*. Here, as in the case of the Deltapine cotton yarns the strength of the 20/1 (29.5 tex) yarn decreases with increasing draft. The strength of the 30/1, 40/1, 60/1, and 70/1 (19.7, 14.8, 9.8, 8.4 tex) yarns on the other hand rises to a maximum and then decreases as the draft increases. The optimum draft with this cotton and drafting system is approximately 7, 10, 18, 21, and 24 respectively for the 20/1, 30/1, 40/1, 60/1, and 70/1 (29.5, 19.7, 14.8, 9.8, 8.4 tex) yarns.

This figure shows the importance of selecting the correct spinning draft. Tests including extremes in draft showed that a loss of as much as 35 per cent in yarn strength can result from the selection of too high a draft for the 30/1 (19.7 tex) yarn.

A loss of as much as 10 per cent can result from an incorrect selection of draft on the low side of maximum for the 60/1 (9.8 tex) yarn. An incorrect selection of draft on the low side of the optimum draft would not only result in a loss in yarn strength but would also result in a loss in roving frame production.

Long Staple Cotton, Whitin Casablanca Double Apron System. The effect of spinning draft on the skein count-strength product of yarns spun from single rovings of the long staple Wilds 13 cotton on the Whitin Casablanca double

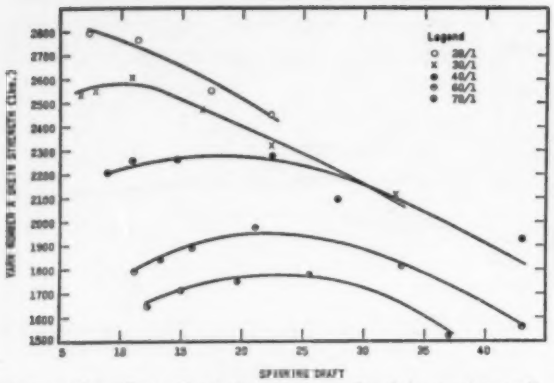


Figure 5. The effect of spinning draft on the skein count-strength product of yarns spun from single rovings of Acala 4-42 cotton on the Whitin Casablanca double apron system.

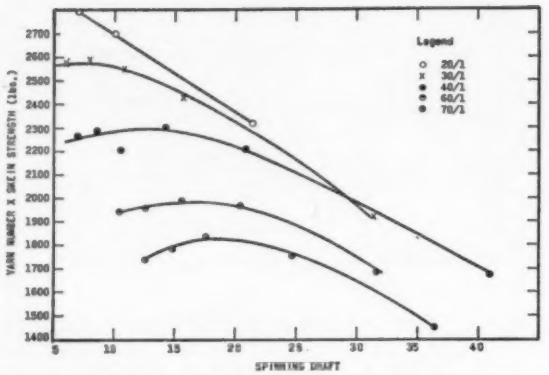


Figure 6. The effect of spinning draft on the skein count-strength product of yarns spun from single rovings of Wilds cotton on the Whitin Casablanca double apron system.

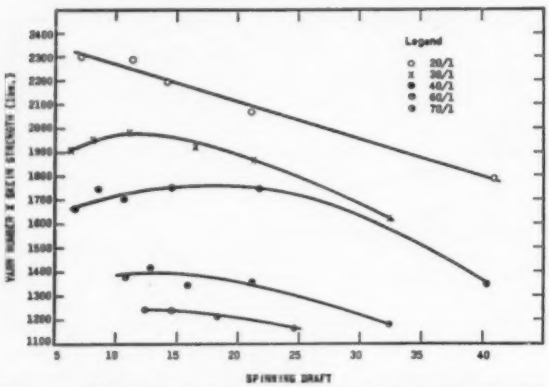


Figure 7. Effect of spinning draft on the skein count—strength product of yarns from single rovings of short staple cotton on the Whitin Casablanca double apron system.

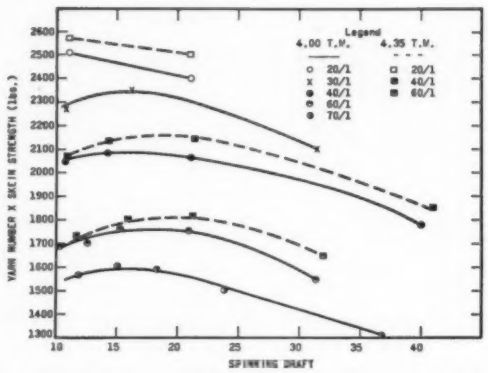


Figure 8. The effect of spinning draft on the skein count-strength product of yarns spun from a medium staple Deltapine cotton on the Saco-Lowell Shaw single apron spinning system.

apron drafting system is shown in *Figure 6*.

The coarse yarns from this cotton, like the Deltapine and Acala 4-42 cottons, decreased in strength with an increase in draft. The 30/1, 40/1, 60/1, and 70/1 (19.7, 14.8, 9.8, 8.4 tex), like the same yarns for the Acala 4-42 cotton, first increased slightly in strength, reached a maximum, and then decreased as the draft increased. These curves indicate that within the drafting limits of this frame the optimum drafts are approximately 7, 8, 11, 17, and 19, respectively, for the 20/1, 30/1, 40/1, 60/1, and 70/1 yarns (29.5, 19.7, 14.8, 9.8, and 8.4 tex). The optimum drafts for the medium and fine yarns are lower for this long staple cotton on the double apron system than the drafts for the medium staple Acala 4-42 and Deltapine cottons.

The importance of selecting the correct spinning draft is again very evident from this graph. For example, a draft either on the low side (12.5) or the high side (24.7) of the optimum draft (17.5) for the 70/1 (8.4 tex) yarn would result in a significant (99% level) loss in yarn strength.

Significance of difference tests did not reveal a difference between the strength at optimum drafts (14.2 and 15.6) and those on the low side (7 and 10.4) for the 40/1 and 60/1 (14.8, 9.8 tex) yarns but replicate tests did show a difference in favor of the optimum draft. A loss of 35 per cent in yarn strength would result if a draft of 30 was used for the 30/1 (19.7 tex) yarn instead of a draft of approximately 8.

Short Staple Cotton, Whitin Casablanca Double Apron System. The effect of spinning draft from single rovings of the short staple cotton on the yarn skein count-strength product is shown in *Figure 7*.

The curves for the 20/1 (29.5 tex) yarns are very similar to those of the Deltapine, Acala 4-42, and Wilds cottons. The 30/1, 40/1, 60/1 (19.7, 14.8, 9.8 tex) increased until a maximum point is reached and then decreased.

The yarn strength at optimum drafts for the 30/1 and 40/1 (19.7 and 14.8 tex) yarns was significantly greater than at drafts on either the high or low side of optimum. The 30/1 (19.7 tex) yarn at the optimum draft of 10 was significantly stronger (95% level) than yarns at drafts of 6, 16.5, 21.3, and 32.4.

The 40/1 (14.8 tex) yarns at the optimum drafts (14.5 and 20.8) were significantly stronger (99% level) than yarns at drafts of 6.6 and 40.5. The 60/1 (9.8 tex) yarn at optimum draft at 12.8

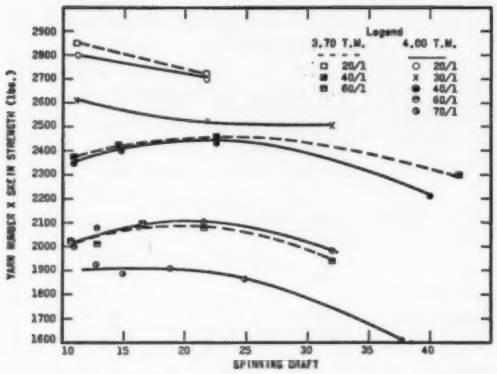


Figure 9. Effect of spinning draft on the skein count-strength product of yarns from single roving of Wilds cotton spun on the Saco-Lowell Shaw single apron system.

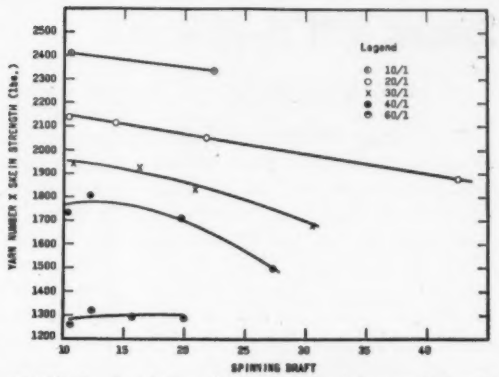


Figure 10. Effect of spinning draft on the skein count-strength product of yarns spun on the Saco-Lowell Shaw single apron system from single rovings of short staple cotton.

was significantly stronger (95% level) than yarns at all the higher drafts.

A comparison of *Figures 1, 5, 6* and 7 reveals that the effect of spinning draft with the double apron system is more critical with the long than with the medium and short staple cottons. With the short staple cotton the 70/1 (8.4 tex) could be spun at drafts up to 25 but due to excessive end breakage it could not be spun at higher drafts. This indicates that the spinning limits (i.e., the finest yarn number that can be spun) of a cotton depends on the selection of spinning draft.

The locus of the maximum point on the curves for the 20/1, 30/1, and 40/1 (29.5, 19.7, 14.8 tex) yarns slopes to the left while that for the 60/1 and 70/1 yarns (9.8, 8.4 tex) slopes in the opposite direction.

Medium Staple Deltapine Cotton, Saco-Lowell Shaw Single Apron System. The effect of spinning draft on the strength of yarns spun from the medium staple Deltapine 15 cotton on the Saco-Lowell Shaw single apron spinning system is shown in *Figure 8.*

This graph reveals that the 20/1 (29.5 tex) yarn loses strength with an increase in draft while the strength of the 30/1, 40/1, 60/1, and 70/1 (19.7, 14.8, 9.8, and 8.4 tex) yarns increases, reaches a maximum, and then decreases with increased draft.

The 20/1, 40/1, and 60/1 (29.5, 14.8, 9.8 tex) yarns were spun again, with a different twist multiplier. The spinning draft vs. yarn skein count-strength product curves (*Figure 8*) resulting from this test show that the use of a different twist multiplier does not change the general shape of the curves to any appreciable extent but merely raises or lowers the general strength level.

This is important because these tests indicate that the optimum spinning draft can be selected without regard to the twist multiplier, provided the twist multiplier is somewhere near that for maximum strength. The count strength product versus spinning draft curve for the 60/1 (9.8 tex) yarn at a TM of 4.35 reveals that as much as 10.60 per cent loss in yarn strength can result from a faulty selection on the low side of optimum draft.

Long Staple Cotton, Saco-Lowell Shaw Single Apron Spinning System. The effect of spinning draft on the skein count-strength product of yarns from single rovings of the Wilds 13 cotton spun on the Saco-Lowell Shaw single apron system is seen in *Figure 9.* The strength of the 40/1 and 60/1 (14.8, 9.8 tex) yarns at optimum drafts (22.5 and 21.5) is significantly (99% level) stronger than those of drafts on both the high and low side of optimum (10.8 and 40 for the 40/1 yarn and 10.8 and 32 for the 60/1 yarn).

Beyond the optimum point the decrease in yarn strength with increase in draft is not as large as was evident when spinning the same cotton on the double apron system (*Figure 6*). With long staple cotton, the spinning draft is more sensitive when using the double than the single apron system. As was true with the medium staple cotton, spinning with a different twist multiplier did not change the general shape of the skein count-strength product vs. spinning draft curves to any appreciable extent but merely raised or lowered the strength level.

Short Staple Cotton, Saco-Lowell Shaw Single Apron System. The effect of spinning draft on the skein count-strength product of yarns from single rovings of the short staple cotton is shown in *Figure 10.*

The decrease in yarn strength with increase in spinning draft beyond the optimum is not as great for the 20/1 and 30/1 (29.5, 19.7 tex) yarns as was observed for the short staple cotton on the double apron system (*Figure* 7). However, due to excessive end breakage the 40/1 and 60/1 (14.8, 9.8 tex) yarns could not be spun at drafts above approximately 27 and 20, respectively, and the 70/1 (8.4 tex) yarn could not be spun at any draft.

A comparison of this figure with that of *Figure* 7 reveals that yarns from this cotton are stronger when spun on the double than the single apron system.

The experiments with this short staple cotton indicate that by finding the optimum spinning draft a finer yarn than otherwise possible can be spun on both the double and single apron systems.

(Continued on next page)

Spinning draft *(from page 113)*

CONCLUSIONS

This study relating the effect of spinning draft on yarn properties presents a number of interesting findings. The importance of the selection of optimum spinning draft was demonstrated when it was shown that a loss of as much as 35 per cent in yarn strength could result by an incorrect selection of spinning draft on the high side of the optimum while as much as a 10.5 per cent loss in yarn strength can be realized by a faulty selection on the low side of optimum draft.

An unwise selection on the low side of optimum draft would result in an economic loss in roving frame production.

The use of the optimum spinning draft should either improve yarn strength and uniformity or maintain it while using a shorter cotton.

A better knowledge of the yarn strength vs spinning draft curves for coarse, medium and fine yarns should aid the spinner in profitably balancing the particular requirements of yarn strength and production.

When spinning draft is varied an increase in yarn strength for coarse numbers [20/1 and 30/1 (29.5, 19.7 tex)] is accompanied by an increase in the uniformity of the weight per unit length of the yarn and the elongation at break, and a decrease in strength is accompanied by a decrease in uniformity and elongation.

The long staple cotton (Wilds) is more sensitive to spinning draft with the double apron system than the short and medium staple cottons and it is also more sensitive when using the double than single apron system.

The proper selection of spinning draft makes possible the spinning of finer yarns than would otherwise be possible. A finer yarn can be spun from short staple cotton when using the double than when using the single apron system.

The use of different twist multipliers in the area of maximum strength did not change the general shape of the spinning draft vs skein count - strength product curves but merely raised or lowered the general strength level.

ACKNOWLEDGMENT

The authors wish to express their appreciation to Wilbur M. McSherry and Shirley M. Reinhardt for making the yarn strength and uniformity tests and to fellow members of the Cotton Mechanical Laboratory for processing the sliver, roving, and yarns used in this investigation. Recognition also is due to H. W. Little, statistician, for his advice and aid in evaluating the experimental data.

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Glass fabric dyeing process offers brilliant colors, deep shades

■ WITH a recently developed process for dyeing glass fiber fabrics it is possible to obtain much deeper shades and to use a much greater variety of dyes and pigments, according to an announcement by the Silicones Division of Union Carbide Corp.

Designated the "Silrama" process, it is said to involve the use of a chemically reactive silicone that forms a chemical union between the glass fibers of the fabric and the dye or coloring pigment, literally locking the dye onto the glass.

In addition to the greatly broadened range of colors that can be made available on glass fiber fabrics, the following advantages are claimed for the process:

Note the number of colors and deep shades of these glass fabrics. The process makes possible the use of such dyes as vats, sulfurs, directs, naphthols, premetallized, etc.

(1) Noticeable improvement in tensile strength and flex abrasion resistance;

(2) An almost infinite variation in hand, from harsh to soft, may be obtained, depending upon requirements;

(3) Excellent drape and crease resistance;

(4) Fabrics may be washed repeatedly in either soaps or detergents without suffering visible reduction in original color intensity;

(5) Light fastness is equal to the maximum obtainable with any particular class of dye used;

(6) Alternate light and wash resistance—fabrics are unaffected by rain and sunlight.

(7) Minimum of mark-off, even on darkest shades of deep colors;

(8) Solvent resistance is imparted to fabrics—spots may be removed with commonly used cleaning fluids;

The basic technique used in the process is said to have potential application in the dyeing or printing of other textile fibers.

The process is being licensed by the Silicones Division, Union Carbide Corp.

Considering Market Research?

Here are some points to keep in mind when establishing a market research department

by Leland Liang
*Marketing Research Director**
Werner Textile Consultants

Exclusive

MARKETING research is generally thought of as a relatively new tool of management, a tool which has become extremely important since the end of the Second World War. The recent emphasis on marketing research is certainly a reflection of the complexity of the marketing process and the increased competition for markets.

It is indeed necessary for top management of textile mills to obtain more accurate information, and this need has fostered new techniques of gathering, recording, and analyzing marketing data. The result has been the development of a specialized skill and the use of marketing specialists to aid top management in making decisions.

During the post-war period, it has not been possible for those who guide the destiny of their mills "to fly by the seat of their pants." Marketing managers of textile mills—be the mills large or small—find that they need a lot of help, particularly in obtaining accurate information. They need someone to help them to keep track of market trends, to keep an eye on their competitors, to analyze their sales figures, to pinpoint their markets, to find new markets, to study their advertising effectiveness, and a host of other marketing functions.

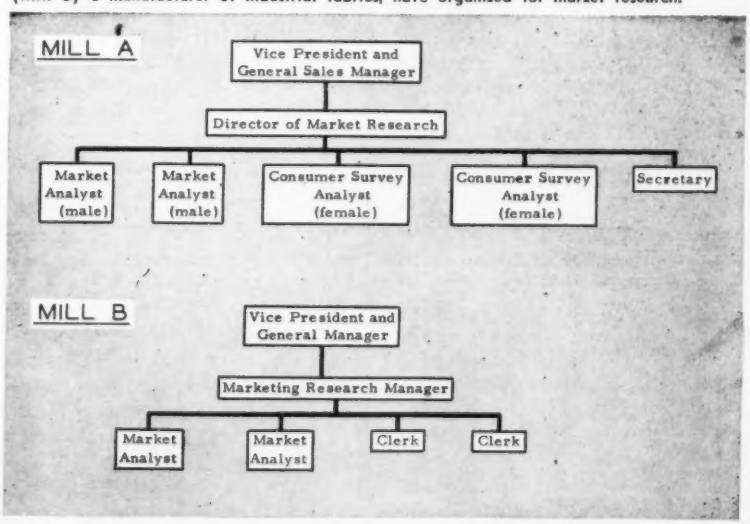
The application of systematic, objective, and thorough procedures of all these functions has come to be known as "marketing research." More and more textile mills are beginning to base their decisions on facts obtained through marketing research rather than on unproved rationalizations or pure whims.

Organization of Marketing Research Department. How to organize an effective marketing research department to serve the particular needs of a textile mill is a favorite topic for discussion among marketing analysts. Probably because the field is so new, especially in the textile industry, there are few generally accepted principles. Indeed, among the marketing research departments of various mills, no two such departments are alike, in terms of their organizational structure, the specific activities performed, the staffing of the personnel, etc.

Under the circumstances, a review of how marketing research departments have been organized in textile mills may prove to be useful. The accompanying charts show the organization arrangements of two such mills.

Marketing research departments in the textile industry vary in organizational arrangements, for obvious reasons. Mill A's marketing research department is perhaps the best in the industry, both in terms of the functions performed as well as in the quality of its work. The two consumer survey

How two textile mills, one (Mill A) a large producer of consumer products and the other (Mill B) a manufacturer of industrial fabrics, have organized for market research.



*Dr. Liang is at present Lecturer on Textile Marketing, The City College, New York, N. Y.

analysts suggest that consumer products are an important part of its total sales.

Several textile mills, not shown in these charts, have only one person each doing a marketing research job. Their activities are, of course, limited accordingly and restricted to specific functions.

Differences among the marketing research departments are a reflection of the functions which have been assigned to them, as well as the requirements of the mills. Thus, Mill A, a large producer of consumer products, requires the services of two consumer survey analysts; while Mill B, primarily a producer of industrial fabrics, has little use for this type of analyst. In short, the requirements of the mill must determine the kind of marketing research department to be established.

The formal organization of marketing research departments is a relatively recent development among many textile mills. Indeed, among the largest mills in the industry, only two have started recently to organize such a department.

When to organize a marketing research department is always puzzling to a mill which has not yet set up its own separate unit. Even among progressive textile mills, particularly the smaller ones, most have not yet ventured into the field of marketing research.

One such mill, whose annual sales volume is in the vicinity of $20,000,000, with branded fabrics sold to the over-the-counter trade, and whose top management has recognized the dire need for marketing research, leaves the job to ordinary clerical personnel under the cursory direction of the treasurer!

Budget. Insofar as the budget for the marketing research department is concerned, no two mills are or can be alike. Take Mill A, referred to above, as an example. This mill had a budget for its marketing research department of something like $75,000 for 1957, which was about 0.15% of its anticipated sales for the year. And this budget is probably very high for the textile industry—most such departments have a lower budget.

Scope of Activities of Textile Marketing Research. The specific activities of the individual or department responsible for marketing research vary from mill to mill. A mill producing consumer goods primarily, such as sheets and towels, would certainly face different marketing problems from a mill producing industrial fabrics.

Or a mill knitting jersey fabrics would meet problems quite different from those of, say, sales yarn mills. However, taking the textile industry as a whole, the following are some of the areas which a marketing research department should be concerned with.

Channels of Distribution for Textile Products. This is probably among the most important areas of marketing research. Very few, if any, marketing programs can be successful without a thorough knowledge of the distribution pattern of a mill's products.

Trends in End Uses of Man-Made Fibers and Blends. Within the past several years, man-made fibers and blends have entered the numerous textile markets in a big way. This advance will probably be accelerated in the next decade, in view of the introduction of so many new fibers by several large producers.

Such inroads must have profound effects on existing textile markets, especially markets which are traditionally dominated by one of the natural fibers. It is important that top management of any mill be advised properly and early enough on the trends of the usage of man-made fibers and blends.

Flow of Goods from Mill to Consumers. Frequent and prompt information on sales and stocks at the mill, cutter, wholesale, and retail levels is extremely important, because such information may help the mill to plan its production on a more stable and even basis, which would result in lower costs, less inventory losses, more stable prices, and so forth.

Competition from Plastics, Paper, and Nonwoven Fabrics. Since the end of the Second World War, both plastics and paper have competed severely for markets traditionally held by textiles. The inroads made by plastics, nonwoven fabrics, and paper have gone into such end uses as curtains, draperies, upholstery, and seat covers in the household field; petticoats, skirts, and interlinings in the apparel field; bags in the industrial markets; and so on.

Probably such inroads will be intensified in the years ahead, with the ability of manufacturers to build the desired properties into plastics, nonwoven fabrics, and paper for particular end uses. Such competition has gone further than many executives realize.

Sales Management Policies. A host of sales management problems, such as sales potentials, sales quotas, and salesmen's compensation, require the constant attention of management. To develop tools which can measure accurately the sales potentials of a mill's products would enable the sales executives to set up better sales quotas.

Advertising Budgets. Advertising has come into its own since the end of the Second World War. How much to spend for advertising, how to judge whether the advertising expenditures pay off, and so forth, are questions which must be answered for management.

Conclusions. It is possible for every mill to develop a clear and accurate role of marketing research, geared to its own particular requirements. A properly organized marketing research department can make the following contributions:

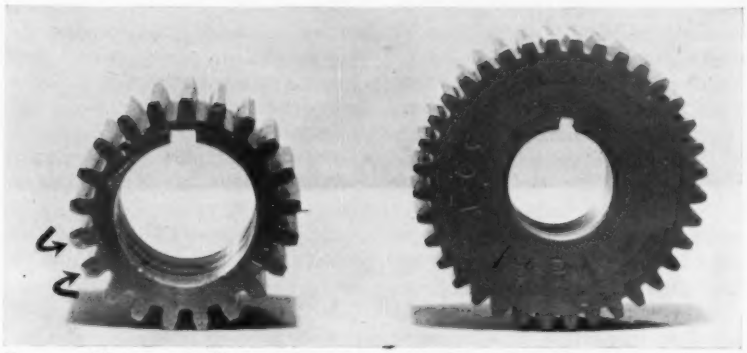
Marketing research tells mill management where the mill stands in its industry.

Marketing research tells mill management what industry trends are likely to be.

Marketing research is an essential tool in the development and introduction of new products, as well as in evaluating and improving present products.

Marketing research is an essential tool in appraising and improving sales-management effectiveness.

Don't let gears steal profits



Gear on left is practically new, but mistreatment destroyed it. Note how teeth were battered with a hammer (arrows) when gear was removed from shaft. Gear was probably difficult to remove because of rough, inaccurate bore. This practice can be cured by using gears with accurate bores, and accurate studs, plus use of gear pullers—never hammers. Run-out of pitch line on gear to right is held to 0.0035" TIR; bore size is accurate to +0.0005", -0.

Here's how to prevent them from damaging yarn, cutting production, and wearing out fast

by L. H. Morrison
President
Medley Manufacturing Co.

Exclusive

AS RECENTLY as two years ago it is very unlikely that an article would have been written on so commonplace a subject as gears. It is even less likely that a mill man would have read it.

What's happened in the meantime to make mill men take a second look at something which was there all the time? Simply that the textile industry finally began to count up the millions of dollars it was losing in damaged yarn, lost production, and high replacement costs, because of poorly made gears.

Most mills used to lump the purchase of gears in with general supplies such as light bulbs, nuts and bolts, brooms, and the like. The only concern of mill management—if it was concerned at all—was to check that the PA was buying gears at the cheapest price.

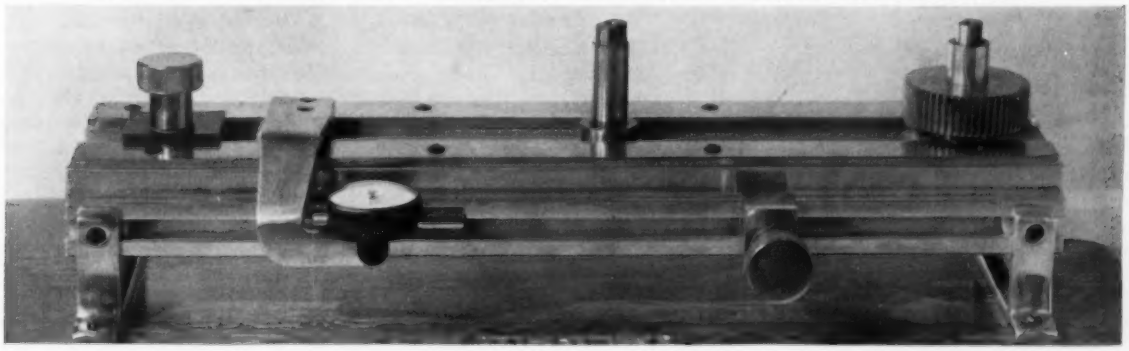
Many a mill saved the cost of pensioning off an old employee by putting him to work making gears out in the mill shop. They figured that they had a labor cost of zero for the gears he made. The truth is that these low-cost gears were the most expensive the mill could possibly have bought.

These same mills which were busily making gears out in the shop had learned at least ten years before about the trouble caused by roll run-out. What they hadn't learned was that gear run-out can cause just as much trouble, especially as drafts go up.

A two-year study of gears and their effects shows that the problem is big enough in dollars and cents to be worth the attention of any mill official.

Check Your Gears. I hinted above that about two years ago the picture began to get considerably brighter. Any mill can now use the new defect-tracing and gear-checking equipment to set up a program for choosing and maintaining gears which will pay for

Gear checker is a simple, inexpensive tool, which if properly used, will help to eliminate problems caused by faulty gears.



itself many times over. Many are already doing just that.

An interplant bulletin sent out by one of the largest mill groups says:

"After we ran various tests on our defect tracer and studied gearing diagrams to find the sources of nonuniformity, we proved that a big part of our trouble could be back-tracked to improperly meshed or defective gears. And by far the most trouble was caused by defective gears. Some gears had bad teeth, and many were found to be out of round or off-center.

"After we found what was causing our trouble, we bought a gear tester and used it to check our pins and master gears."

Yarn Quality Easy Problem. Fortunately, one of the major gear problems—the effect on yarn quality—can be dealt with simply and quickly. Gears which will insure top yarn quality can be made by skilled personnel in any well equipped shop. All you have to do is use the right metal for the load conditions the gear must face, and inspect carefully.

These gears should cost no more than any others. Why? A gear with no more than 0.0035" T.I.R. run-out on the pitch line will not pattern the yarn at any draft up to 40. And a good shop should easily hold run-out to this limit.

Longer Life Not So Easy. The problem of wear life is not so easily solved. Two perfect gears, mounted on perfect studs and perfectly meshed, would run on a film of oil with no metal-to-metal contact at all. After this, the amount of contact (or wear) depends entirely on how much error was built into the gears.

That's the problem: How much wear can we prevent without the cost being more than the results are worth? Finding the right answer has caused a lot of head-scratching, not only by the men who run mills but also by the men who make gears.

One point worth making is that it's a lot less costly to use a wear-resistant metal than to make gears to extremely close tolerances.

The cost of any wholesale shift to better gears certainly couldn't be justified. Many gears in general use are perfectly good enough for the job they're doing. But on the other hand, some gears could be replaced by better gears costing considerably more money—actually at a big saving.

For example, the extra load on the gears in the drafting zone of high-draft spinning is usually beyond the capacity of ordinary gears. They also fall short where they must stand up to high-impact shock loads, as the loom friction gear must.

The price paid for a loom friction gear is only the beginning. When it fails, an average of four loom hours is lost. And three hours of a fixer's time is needed to pull the shaft, take off the worn-out gear, and put on a new one. So if we could make this gear last twice as long, the higher first cost would not be very important.

Poor Gears—Poor Performance. Digging a little deeper into this business of loom friction gears, we came across three mills with the same problem:

Mill A has 700 looms. Fixers put on 364 new friction gears in a 12-month period.

Mill B has 1,000 looms. In one year they bought 600 friction gears.

Mill C has over 1,600 looms; 110 of these are a different model from the rest. These 110 looms chewed up 100 friction gears in 12 months.

There was certainly something wrong in these mills besides the gears. We're pretty sure that wrong settings of the motor pinion gears and loom friction gears had a lot to do with the trouble.

But—during the same period that these mills were replacing so many friction gears:

Mill A lost not a one of 20 gears especially designed for the shock load.

Mill B didn't replace any of 12 special gears.

Right Pressure Angle Ups Wear Life. A gear manufacturer says, "You can increase the strength of a gear chain 20% simply by switching from 14½° to 20° pressure-angle gears." True, but since a mill must stock so many draft gears, it would be costly to take advantage of this 20%.

But a mill should keep this possible saving in mind, and include it in any major change-over program, which would mean a change of gearing anyway.

Get Better Wear Life. Here are some ways you can increase the wear life of your gears:

Check all gears for run-out before they leave the stock room.

Include this in all purchase orders for gears: "These gears must not exceed 0.0035" T.I.R. run-out on the pitch line or 0.0005" in bore size."

If these simple rules are followed, and gear maintenance is a regular program, the mill will soon be rid of gears that eat up profits.

Executive views

(from page 83)

the 35- or 36-hour week an anachronism unless you are going to have a six-hour day six days a week. If you have a seven-hour day five days a week, your manufacturing plant will be idle three hours a day, and the tremendous investment per worker required in industry today makes it advisable to get as much production per day as possible.

In many of the service industries, the pressure is for shorter weeks. Nobody was ever willing to work a shorter week for a shorter pay check, and therefore the short week increases the cost of services, and when prices get too unreasonable people become unemployed. The labor union people want all of this corrected by law, but it is impractical to pass a law requiring a householder to buy something he can't afford.

Sooner or later, we think the laws of economics must be given a little consideration, but they have taken a terrible beating at the hands of the labor unions in the manufacturing industries, and one of the most obvious results is the accelerated pace of technological unemployment.

Georgians report on

Staff report

LIVELY discussions on many topics of current interest to superintendents and overseers of carding and spinning were heard by the more than 160 who attended the recent spring meeting of the Textile Operating Executives of Georgia which was held at the A. French Textile School of the Georgia Institute of Technology, Atlanta.

Reported here are the highlights of the carding discussion which was led by **Otis Alston,** superintendent of Swift Spinning Mills, Columbus, Ga. An analysis of the spinning discussion will appear in the July issue.

Metallic Clothing. To better serve members and friends who attend their technical discussion meetings, the Textile Operating Executives of Georgia have initiated a practice of presenting reports on subjects of special interest to the group.

Metallic clothing for cards was the subject chosen for the spring, 1959, meeting. Superintendents of two large mills—one that has used metallic on all cards for a number of years and another that is presently engaged in installing the wire on all cards after successfully using it on a number of cards for about three years — answered questions designed to enable those present to evaluate the results which have been obtained.

In the box on the next page are the questions (in italics) and the answers given by the spokesman for mill X where all cards have been equipped with metallic clothing for a number of years. Answers of the representative of the mill now in the process of installing the clothing (Mill Y) are incorporated in the staff-prepared feature article which begins on page 85 of this issue.

SRRL Opener-Cleaner. Good opening and blending are provided by the SRRL opener-cleaner which was recently made commercially available, an operating executive of a mill using a mix of MLS ⅞" staple told the group.

In his mill the machine is used in the opening line after the Superior cleaner, with stock being taken from the SRRL unit by a No. 11 condenser and from there to the picker room. The machine handles 994 lb per hr, running about 90 per cent of the time.

Spinnable fiber (above ½") contained in the waste removed from the cleaning section of the machine was reported to be 29.4 per cent. Trash or foreign matter removed ranges from 65 to 70 per cent. Total waste removed was said to be approximately 1 per cent.

No change in nep count or yarn breaking strength has been observed.

High Compression Rolls on Pickers. Six mills gave their experience with high compression rolls on pickers.

As shown in the Table I, the net weight of laps made with this equipment ranges from 51.25 lb to 80 lb, and the diameter of the laps varies from 16 to 20 in.

In addition to the tabulated data, the following mechanical details were provided:

a. In five of the mills pressure is applied to the rolls by air.

b. An air-operated rack release is used in three of the mills.

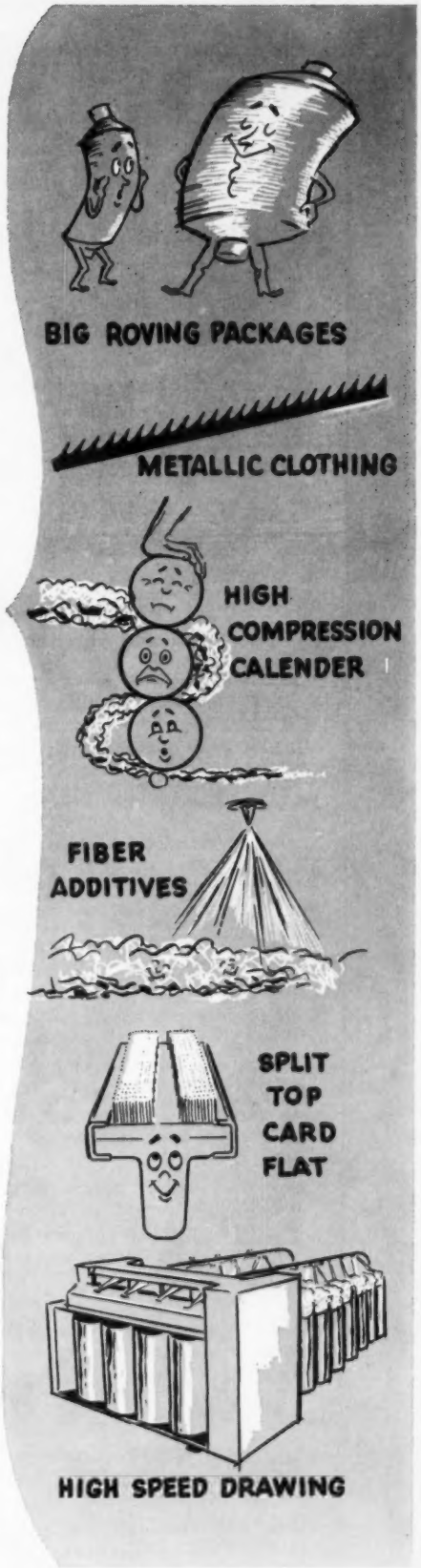
c. Lap pin pushers are not used.

d. Five mills use lap racks or trucks to transport the heavy laps from the picker room to the card room. A lap conveyor is used in one plant.

The following processing information was reported:

a. There has been no change in lap yard-to-yard variation at four of the plants. A slight increase has been the experience at one.

b. Large laps have had no effect on waste at the cards in three of the mills. Less lap waste is



Questions on Metallic Clothing Answered by 2 Cotton Mill Superintendents

Q. How soon can the cost of a complete changeover from conventional to metallic clothing be amortized, and what factors are considered in determining this?

MILL X: Metallic can be amortized in about two (2) years. Factors used are cost of material and labor to install and savings on labor and waste.

Labor Savings	Knee Wire	Metallic
Grinding cycle	240 hr	None
Grinding cost per card 120 hr	$1.634	$.598
Stripping cost	.667	Included in Grinding
Total cost per card 120 hr	$2.301	$.598
Savings per card per 120 hr	$1.703	
Savings per card per yr (50 weeks)	$85.15	
Total annual savings per card	$85.15	

Waste Savings		
Total waste (strips)	3.50%	2.50%
Production per 120 hr per card at 12.00 lb hour - 1440 pounds		
Pounds waste at per cent made	50.4	36.0
Loss per pound of waste (strips)	23.10c lb	
Loss per card 120 hr	$11.64	$8.32
Savings with metallic wire per card 120 hr	3.32	
Savings per card per yr (50 weeks)	$166.00	
Total savings per year per card	$251.15	

Cost of material and labor to clothe one card (metallic)	
Base wire on cylinder (275 lb @ 27c)	$ 74.25
Metallic wire on cylinder (140 lb @ $1.35)	189.00
Base wire on doffer (156 lb @ 27c)	42.12
Metallic wire on doffer (93 lb @ $1.35)	125.55
Total material cost	$430.92
Labor cost per card	90.00
Total cost per card	$520.92
Per cent return on Investment	48.21

MILL Y: See article which begins on page 85 this issue.

Q. How does metallic clothing affect quality, uniformity, neps, breaking strength, etc.?

MILL X: The quality is better, uniformity is better, neps are less. The breaking strength is about the same.
The last complete test made on knee wire was in 1951. These and present averages are listed below:

	1951 Knee	1951 Metallic	1959 Present
Uniformity (sliver graph)	19.73%	14.31%	——
Uster C.V.	——	——	3.65
Breaking strength (21W)	91.2 lb	91.0 lb	95.6
Break factor	1915	1911	2036

Note: Most all old tests show no significant difference in break. Present breaks are all metallic—new type spinning and roving.

MILL Y: See article which begins on page 85 this issue.

Q. How does waste removal compare with conventional clothing?

MILL X: Waste is about 1.00% less on strips. The fly is about the same.
Waste which could be controlled to some extent with card removal of waste:

	1958 Average %
Card room sweeps	.58
Card room strips	2.40
Card room fly	1.29
Dust House	.47
Card room clearer	.05
Spinning sweeps	.54
Spinning clearer	.03
Spooling sweeps	.12
Weaving sweeps	.98
Cloth brusher dust	.13

MILL Y: See article which begins on page 85 this issue.

Q. What are the differences in settings as compared to conventional clothing?

MILL X: Following are the card settings used:

	Metallic	Conventional
Lower edge back plate	.022	.034
Upper edge back plate	.022	.022
Flats—back	.009	.012
Flats—intermediate	.009	.012
Flats—intermediate	.009	.012
Flats—intermediate	.009	.012
Flats front	.009	.012
Upper edge front knife plate	.029	.034
Lower edge front knife plate	.022	.034
Flat stripping comb	.015	.015
Doffer to cylinder	.005	.007
Comb to doffer	.022	.034
Cylinder screen to cylinder front	.068	3/16
Cylinder screen to cylinder middle	.034	.068
Cylinder screen to cylinder back	.029	.034
Feed plate to licker-in	.017	.010
Licker-in to cylinder	.005	.007
Licker-in screen front	.068	3/16
Licker-in screen base	.068	.068
Licker-in screen nose	.034	.068
Mote knives to licker-in—top	.012	.012
Mote knives to licker-in—bottom	.010	.010
Angle mote knives	14°	——

MILL Y: See article which begins on page 85 this issue.

Q. What are the differences in care as compared to conventional clothing?

MILL X: Metallic is harder to damage, and maintenance cost is lower. The metallic wire cards require more cleaning—they are mopped once per shift and fronts wiped every two hours. Chokes have to be pulled more often than with conventional wire—Chokes are pulled every two weeks. Selvage chokes are checked every eight hours.

MILL Y: See article which begins on page 85 this issue.

Q. Can you repair damaged wire?

MILL X: Damaged wire can be repaired.

MILL Y: See article beginning on page 85 this issue.

Q. How often is it necessary to set and grind?

MILL X: There is no grinding necessary unless clothing is damaged. Flats are ground once each three (3) weeks. Flats are set once each three (3) months. Backs are set once each six (6) months. Screens are pulled once each twelve (12) months.

MILL Y: See article which begins on page 85 this issue.

Q. Summarize the advantages and disadvantages of metallic clothing compared to knee-wire clothing.

MILL X: Following are the advantages derived from metallic clothing: (1) less grinding required; (2) less stripping required; (3) more uniform due to build-up between stripping; (4) less setting required; (5) less waste; (6) less maintenance (repaired 22 cylinders and 20 doffers in 5 years); (7) more durable.
The disadvantages are: (1) requires more cleaning around the front of the card; (2) requires more choke pulling from screens and arches; (3) cards weigh more—664 lb is weight of base and metallic wire.

MILL Y: See article which begins on page 85 this issue.

made in Mill H. More damaged laps is the result at Mill S.

Fiber Additives. Of particular interest to the group were two reports of mills spraying their cotton with a product that appears to decrease the loss of short spinnable fiber and the breakage of long fiber.

Lap weight and finisher drawing sliver weight increased approximately 3 per cent in Mill H where ¾ to 1½ per cent of the solution is applied to SGO cotton

at the blending feeder. Less lint and fly, particularly around the cards, are other benefits derived. Yarn strength does not appear to have been affected.

At Mill T where 2 per cent of the solution is applied to LM 15/16" cotton at the picker hopper, laps gained approximately a pound per lap; card sliver, 3 grains; and drawing sliver, 3 grains. Waste removed in processing was of a lower grade, and there was less clearer waste. Cleanliness of processing machines was improved. Ends down in spinning were reduced.

"We feel that worthwhile savings will result because of the lower grade of waste obtained due to fewer good fibers being broken and going into waste," Mill T's spokesman declared, adding that the product is applied to all cotton processed by his firm.

Split Top Card Flats. Representatives of two Georgia mills reported test results with split top card flats, each having only one set running.

In a mill carding 1 3/32" MCS-LL cotton at a rate of 6.5 lb per hr it has been found that fewer card strips are made. Also, fewer neps are found in the web—after running 1 hour there are 11 neps per 100 sq in.; after 4.5 hours, 21 neps. Lap fed weighs 14.25 oz per yd. Sliver produced weighs 55 gr per yd.

Carding rate at the other mill is the same—6.5 lb/hr, but SLMB 1" cotton is processed. Card strips were not reduced by a significant amount. Web appearance was said to be better, but comparison of nep count has not been made. Lap weight is 14.67 oz per yd. Sliver weight is 65 gr per yd.

High Speed Drawing. Experience of three mills with the new type high speed (300 to 400 fpm) drawing frames was related.

Following is a summary of the processing information given:

a. *Sliver Uniformity* — In all three plants there is less variation in the sliver produced on the high speed frames than that made on conventional 4-roll frames. One mill man said 20 per cent less and another 16 - 25 per cent less.

TABLE 1

Size and Weight of Laps Made With High Compression Rolls

Mill	Lap Dia. (in.)	Net Weight (lb.)	Tolerance (lb.)	Weight per yd. (oz.)
G	19	80.00	±¾	14.0
H	18	57.60	+½	—
L	17	58.25	+¾	14.3
			—½	
P	18	51.25	±1	16.0
S	20	70.70	±1	14.5
T	16	69.00	±½	17.0

b. *Creeling Methods Used* — The solid and the staggered systems of creeling are employed as explained below:

Mill R (with 64 deliveries running at 300 fpm and 32 at 400 fpm): "We are running both staggered creels and solid creels. Random creeling produces more even yard-to-yard weight, but solid creeling gives better efficiency."

Mill S (operating frames at 308 fpm): "Staggered but not maintained."

Mill U (with 208 deliveries running at 400 fpm): "We creel solid on breaker frames and one delivery per doff on finisher drawing."

c. *Can Size*—Size of sliver cans used appears in Table 2.

d. *Job Load*—32 deliveries per tender is the assignment at two of the plants, and 48 at the third where 208 deliveries are running at 400 fpm.

e. *Break Draft Used*—1.11 is the break draft utilized on the high speed frames at Mill R where SLMB 1" cotton is processed. On conventional 4-roll drawing frames it is 1.22.

At Mill S where 1 1/16" cotton and 1½" rayon and nylon staple are run, a break draft of 1.18 has been found satisfactory, compared with 1.28 on the conventional 4-roll system.

Drafts of 1.48 and 1.60, depending on the length of staple being processed, are used on the 208 frames at Mill U where the cotton grade and staple range from SLMB 1 1/32" to MLS ⅞". On the conventional 4-roll equipment 1.27 had been used.

f. *Clearers*—In two of the three plants (Mills R and U) frames are equipped with pneumatic clearers, and these are reported to be operating satisfactorily. However, a spokesman for one of the plants emphasized the necessity for maintaining correct settings of this equipment.

TABLE 2

Sliver Cans Used on High Speed Drawing

Mill	Can Size (in.)	Sliver Weight (gr/yd)	Full Can Weight (lb)
R	14 x 36 (in creel)	65	35
	16 x 42 (at front)		
S	16 x 42	60	40.5
U	18 x 42 (breaker)	62	42.5
	16 x 42	64	37.5

Revolving underclearers are used at Mill S. No picking and less clearer waste slubs are advantages provided by them, according to the operating executive who reported for this mill.

Large Package Roving. Representatives of ten mills shared with the group their experiences with the various methods of increasing the weight and the size of the roving package. Following is a summary of their replies:

a. *Drop Type Pressers* — By simply changing from conventional to drop type pressers, four of these men found that the roving

TABLE 3

Weight of Roving Package Made and Job Load for 3 Frame Sizes

Mill	Weight of Package Made (oz.) 10" x 5"	12" x 6"	12" x 6½"	Frames per Operator
B			64	3
G			59	4
N	26.72			3
R	30	46	57	4-6
S			67	3-5
T		43		3
V			62	—

package weight increased from 15 to 20 per cent, one 6 per cent, and another "very little."

b. *Roving Uniformity* — Variation is not affected by additional roving being wound onto bobbins, three of the four mill men who reported the 15 to 20 per cent weight increase said. The spokesman for the other mill said variation was improved. In the mill where very little gain in weight was noted, more variation was said to be the result.

c. *Effect of Extra Wrap on Presser*—By wrapping the roving one more turn around the presser foot Mill B increased the weight of the roving package 12 oz—from 52 oz to 64.

At Mill E the result was said to be more variation but more roving on the bobbin.

More roving on the bobbin but lowered frame efficiency was the result at Mill G.

In a test at Mill R package weight was increased by this simple technique about 19 per cent with no adverse effects, but the method was not used long enough for thorough evaluation of it under production conditions.

Although the gain in weight at Mill T amounted to several ounces, the practice of putting an extra wrap on drop type pressers was discontinued because of the increased number of ends down per doff. On the other hand, three wraps are used successfully at Mill U, but the gain in package weight was not reported.

d. *Converting a 10" x 5" to 11" x 5".* In two mills 10" x 5" roving frames have been converted to 11" x 5". Following is what was needed to do the job:

Mill E—Spread and lengthened flyers, lengthened spindles and slides.

Mill R—(1) lengthened spindles 1"; (2) changed builder; (3) changed to 11" x 5" flyers; (4) lengthened carriage racks 2"; (5) raised frame off floor 1".

The weight of the package being made on three types of roving frames and the number of these frames assigned to an operative appear in Table 3.

Gin-damaged cotton ups mill cost 2.5 cents per pound, USDA economist says

Staff report

■ RECENT tests are said to have shown that certain ginning practices are increasing direct textile mill spinning and weaving costs by two and a half cents per pound of cloth.

John E. Ross of the USDA's Agricultural Marketing Service, Stoneville, Miss., told a gathering of about 150 cotton industry representatives:

"When overdrying is used in conjunction with elaborate overhead seed cotton cleaning and two lint cleaners, direct spinning and weaving labor costs are about two and a half cents higher per pound of cloth than when lint moisture is high and moderate amounts of overhead cleaning and two lint cleaners are employed.

"Furthermore, grade levels are largely maintained by the use of the moderate set-up and the quality of the finished cloth is higher."

Mr. Ross spoke at the final technical session of the annual open house of The American Cotton Manufacturers Institute's cotton fiber testing laboratory, located at Clemson College. He drew his conclusions from the results of mill scale spinning and weaving tests* conducted at Joanna (S. C.) Cotton Mills Co. The tests were supervised by the USDA in cooperation with ACMI, The National Cotton Council, and The Institute of Textile Technology.

"The most important quality measurement in the test in indicating processing performance," Mr. Ross said, "was the proportion of fibers shorter than one-half inch in lint cotton.

"Approximately 64 per cent of the variation in ends-down in spinning 30s yarn and 86 per cent in spinning 40s yarn was accounted for by variation in the proportion of short fibers. On the average, an increase of one per cent in short fibers was associated with an increase of 13 ends-down in spinning 30s yarn and of about 60 in spinning 40s."

Mr. Ross said the test found that 42 per cent of the variation in short fibers was associated with variation in lint moisture content at the time of ginning. He added:

"Overhead cleaning machinery had no significant effect on the amount of short fibers in the ginned lint, but again the latent effect of this equipment was shown by a highly significant increase in short fibers in the cotton at subsequent processing stages."

The test also showed, Mr. Ross said, that the lots of cotton subjected to the most extreme drying and cleaning conditions, and which yielded the highest ends-down and weakest yarns, also had the highest number of loom stops.

True cotton quality is necessary to the economic welfare of textile manufacturers, cotton producers, and ginners, the speaker declared. "United, the industry can solve its problems in a manner that will be of mutual benefit to all concerned. Divided, we will see an increased use of substitutes, and experience has taught that a market once lost is one that is hardly ever regained," Mr. Ross concluded.

*Complete report of results is available. For abstract, see T. I. for Jan., 1959, page 113.—Eds.

A loom equipped with a 624-hook Jacquard motion that controls both pile and ground warp. Two comber boards are used, mounted one behind the other. This is a double-lift, double-cylinder model which uses one card per pick, picks being taken alternately from cylinders.

How to make fancy terry

Choosing equipment for introducing weaves which are basically different from three-pick terry

by T. Hargreaves
Exclusive

Part 3 (conclusion)*

IF WE desire to introduce into the terry towel design any weave that is basically different from that used in weaving the usual three-pick terry construction, then we cannot use any of the specially constructed Jacquards which are available and which only use one pattern card for each three picks.

We must select a Jacquard that is operated by a pattern card for each pick, and we must consider the type of harness tie best suited to such needs. We must study whether the type of design can utilize ground warp heddles operated by cam or dobby in addition to the Jacquard-controlled pile warp.

If the design makes it imperative that both the ground warp and the pile warp shall be carried and operated by the Jacquard harness, then we are involved in further problems of harness tying and in any question that may affect the designing principle or the reading and cutting of the design by the card cutting personnel.

Let us assume that it will be necessary to put all the ground, including selvage, in addition to all the pile warp, into the Jacquard harness.

In doing so, we must remember that the pile and ground warp threads must be drawn end for end all across the full width of the warp spread.

Also, that a certain number of hooks in the Jacquard must be reserved for the selvages. In borders such as these, it is necessary to change the method of weaving the selvages—one method for weaving the terry body portion of the towel and another method for weaving the fancy end borders.

Using a 624-Hook Jacquard. Let us suppose that we shall use a Jacquard of 624-hook capacity. We shall reserve 24 of these hooks for

*Parts 1 and 2 of this article were published in the April and May, 1959, issues respectively. The first dealt with equipment for weaving names in terry towels; the second, machinery for two-tone reversibles, sculptured effects, and similar terry fabrics.

weaving the selvages, leaving 600 hooks. Half of these 600 hooks are available for the pile warp and the other half for the ground warp.

For good terry weaving, it is best to have all the pile warp ends weaving in a line in front of the ground warp, and yet each dent in the reed will have one pile end and one ground end drawn through it. To accomplish this, we will use two comber boards, one behind the other, each comber board being 6 rows deep and having 5½ rows per inch across the width of the loom.

The comber boards are exactly aligned one behind the other. The front comber board is to be used for the Jacquard harness carrying the pile threads, and the rear one used for the Jacquard harness that carries the ground threads.

The 300 hooks for the pile warp will consist of 12 hooks, in a short row, multiplied by 25 rows and will be controlled by half of the pattern card.

The 300 hooks for the ground warp will also consist of 12 hooks in a short row, multiplied by 25 rows, and will be controlled by the other half of the pattern card.

When the pattern card is put into the piano card cutting machine for cutting the pattern, the first row of holes is reserved for the selvage. The next 25 rows of holes are for the pile warp yarn. Then the center lace holes are cut, followed by 25 rows of holes for the ground warp yarn, and finally a row for the selvage.

Suppose that we wish to weave a towel that will be 24 inches wide, washed or bleached finish. That will be about 26½ inches loom state woven width. This, in turn, will need about 28½ inches of yarn width in reed.

We have 300 hooks available in the Jacquard for one repeat of our pattern, widthwise. We will use a reed with 32 dents per inch. So 300 divided by 32 equals 9.375 inches of width for each repeat in reed; 9.375″ x 3 repeats equals 28.125″ of yarn spread in reed. Add 8 reed dents at each side for the selvages to give 28.625 inches total yarn spread in reed. This is ideal for our requirements.

Tying the Harness. So we now tie our harness. Tie the ground harness first, and use the back comber board. First, we have 12 hooks for 32 ground ends forming the selvage. The 12 hooks for this purpose are more than enough. The harness for the selvage is passed through the back comber board. Each of the 300 hooks reserved for the ground warp will carry three harness lines.

One line from each of these sets of three is passed through the back comber board, 6 rows deep and 50 rows long, which is one repeat of the pattern covering 9.375 inches. Then a second line from each of these sets of three is passed through the back comber board occupying the following 9.375 inches for the second repeat of the pattern.

The remaining harness line from each of these sets of three is passed through the next 9.375 inches in the back comber board which completes the third repeat of the pattern. The remaining 12 hooks are for the other 32 ends of ground warp forming the selvage.

We now use the front comber board for the harness lines carrying the pile warp threads. Each of the 300 hooks in the Jacquard reserved for the pile threads will carry three harness lines.

One line from each of these sets of three is passed through the front comber board. The first pile thread must occupy the corresponding hole in the front comber board as did the first ground thread in the back comber board, because these two threads, one pile and one ground, must be drawn through the same dent in the reed.

Proceed as with the ground and enter 3 repeats of 9.375 inches, which brings the front pile warp harness in perfect line with the back ground harness and permits perfect alignment of each pile end with its companion ground end in each dent of the reed.

Any design whose full repeat occupies 9.375 inches in the reed consisting of 600 ends, being 300 pile and 300 ground, can be woven by this harness tie. Any smaller size of design that is equally divisible into 9.375 inches or into 600 pile and ground ends can also be used, such as 60 pile and 60 ground which is exactly one fifth that of the repeat of the harness tie.

The above harness tie calculation is given just to show the method of determining the best method of harness tying to suit the design and quality decided upon. The method will vary as circumstances differ. THE END

Tufters optimistic about 1959

by Robert T. Miller
TTMA Publicity-Public Relations Head

■ MANUFACTURERS of tufted textiles have started 1959 with the most optimistic outlook seen in the industry for some time. And according to reports from other segments, this feeling is very much in evidence throughout the home furnishings industry.

While 1958 cannot be considered entirely bad in the light of other years, it was filled with apprehension for many as the nation was still in the throes of recession.

In the tufting industry manufacturers are advancing to meet increasing demands at a rapid pace. New machinery designed to speed up operations, or to combine heretofore separate operations along with streamlining of methods and procedures, have received increased emphasis. Textile employment in the Dalton, Ga., area alone is up some 18 per cent over a year ago.

During 1958 physical expansion of plants in the Dalton area tufting plants alone was in excess of ½ million square feet. Prospects for this year indicate building will go far beyond 1958's figure.

In 1957 tufted products soared to a new all-time high of over 356 million dollars and tufted floor coverings carried the lead by advancing to over 56 per cent of all soft surface floor coverings produced in the United States.

Many trained industry observers believe that when the final tally is made for 1958, the figure will show tufteds accounted for well over 400 million dollars and that tufted floor coverings will be well on their way to claiming 70 per cent of all soft surface sales.

LABOR VARIANCE REPORT
Carding Department

Week ending_____ Ratio_____

Classification	Proration %	Standard payroll	Actual payroll	Variance
Secondhand	12.4	$158.23	$181.77	$23.54*
Card tender	45.0	574.23	542.25	31.98
Can doffer	22.7	289.66	265.64	24.02
Card grinder and helper	16.3	208.00	246.69	38.69*
Saturday cleaning crew and section hand	1.9	24.25	5.09	19.61
Overtime premium	1.7	21.69	76.69	55.00*
Oiler	—	—	12.13	12.13*
Totals	**100.0**	**$1276.06**	**$1330.26**	**$53.75**

Card production 118,703 pounds
Standard labor cost per pound 1.075¢
Standard card room labor cost $1276.06

*Entered in red

Report simplifies labor cost control

by Mara Havinoviski
Exclusive

THE GROWTH of an industry, of one plant, or of a single department is usually accompanied by severe growing pains. As business grows it becomes increasingly difficult for one individual to control the whole business as easily or as well as he did in the "early days."

First of all, the realization that anything is wrong may come too late to the man at the top. Furthermore, individual investigation to track down inefficiencies would take away important time of key personnel from the business at hand. On the other hand, a well-kept report will show in black and white, right away and beyond any doubt, what is wrong and where.

The report described herein has been used, with definite success, to keep a close control of one of the most important and variable production costs—labor costs. A by-product is its value in helping management keep track of supervisory merit and of any material and overhead factors that could contribute to excessive labor costs.

Its most important feature is that it shows, in terms of dollars and cents gained or lost, the efficiency of every activity in a department. Cost analysis of each activity in a department shows where trouble lies and, indirectly, what action is to be taken.

This analysis results from comparing actual costs taken from weekly payroll sheets with standard costs derived from budgeted or expected costs based on planned or normal production. Red figures showing up week after week, and due to the same activity, will mean that there is real trouble in that area.

To keep this discussion as simple and as short as possible, only one department—carding—will be discussed. Similar periodical reports covering all the other departments would provide management with a most valuable tool in controlling efficiency at the source.

Tabulating the Standards. First the expected standards of performance are established. For example, there are 140 cards which are to run 80 hours per week or two eight-hour shifts per day for five days. In addition, there will be a Saturday cleaning schedule. There will be 24 people involved, 12 on each shift, and an additional six people used in the Saturday cleaning.

Table 1 lists the different help classifications from the secondhand down. Next are listed corresponding rates per hour, hours

TABLE 1
Standard Labor Cost Table—Carding

Classification	Wage rate	Hours per week	Number employed: First shift	Number employed: Second shift	Total man-hours	Total labor cost/wk	Proration (per cent of total)
Secondhand	$1.656	45	1	1	90	$149.04	12.4
Card tender	1.130	40	6	6	480	542.40	45.0
Can doffer	1.139	40	3	3	240	273.36	22.7
Card grinder	1.320	40	1	1	80	105.60	8.8
Grinder helper	1.130	40	1	1	80	90.40	7.5
Saturday crew (cleaning):							
Crew	1.130	3	5	—	15	16.95	—
Section hand	1.310	5	1	—	5	6.55	1.9
Overtime premium: Section hand and Saturday cleaning crew						20.03	1.7
	Totals		**18**	**12**	**990**	**$1204.33**	**100.0**

per shift per week, number of people employed on each shift, total man-hours, and total labor cost per week. Included are the Saturday cleaning crew as well as the allotted overtime premium for the six. Finally the total extended labor costs are prorated to obtain the per cent of the total standard cost attributable to each activity. The wage rates are chosen purely for example and are not necessarily the wages paid in any plant in any industry.

Next, establish the standard cost per card hour and the standard labor cost per pound of production. Thus 140 cards x 80 hours equals 11,200 card-hours based on a standard production per card-hour of 10 pounds. In the light of all this data, $1204.33 total standard labor cost divided by 11,200 card-hours gives us a standard labor cost of $0.1075 per card-hour. Dividing the labor cost per card-hour by the pounds per card-hour (10), gives 1.075¢ standard labor cost per pound.

These standards may now be applied against actual performance to tell which activities are making or losing money. From the weekly payroll are obtained the actual and individual labor costs. This information is listed in the Actual Payroll column of the Labor Variance Report [top of p. 125].

A production report for the corresponding week reflects a produced sliver poundage of 118,703. Drawing production (117,411 pounds) extended by a waste factor of 1.011 gave the sliver poundage.

While it is true that this calculated production may not be absolutely correct, due to weekly variations between carding and drawing productions, this variation should average out in the long run. Furthermore, any such variation is so small that it should not discernably alter variance and interpretation of such.

Thus, 118,703 pounds produced in carding multiplied by 1.075¢ standard labor cost per pound gives the total standard or absorbed cost for the week—$1276.26. Distributing this amount by the per cent prorations from Table 1, gives the absorbed labor costs for each departmental activity. The last column in the Labor Variance Report shows the variance in red if the actual cost is greater than standard.

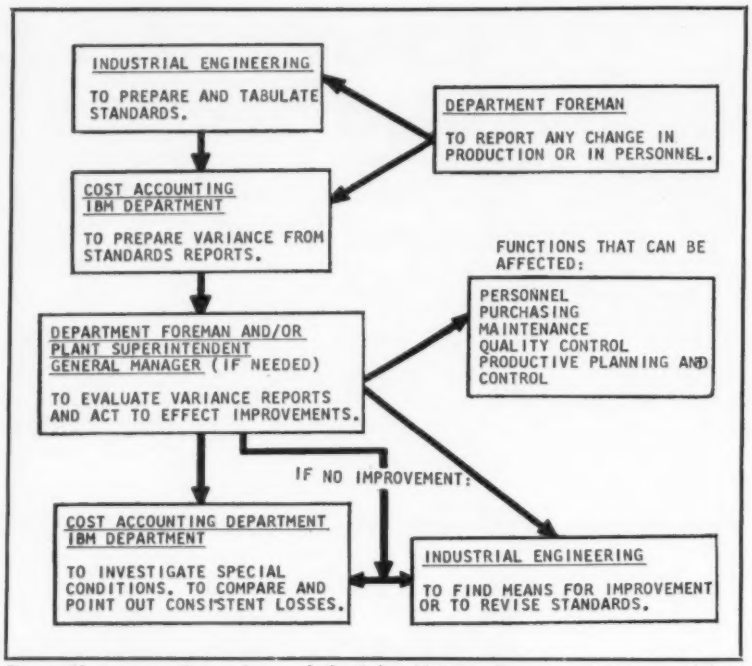

INDUSTRIAL ENGINEERING
TO PREPARE AND TABULATE STANDARDS.
DEPARTMENT FOREMAN
TO REPORT ANY CHANGE IN PRODUCTION OR IN PERSONNEL.
COST ACCOUNTING IBM DEPARTMENT
TO PREPARE VARIANCE FROM STANDARDS REPORTS.
FUNCTIONS THAT CAN BE AFFECTED:
PERSONNEL
PURCHASING
MAINTENANCE
QUALITY CONTROL
PRODUCTIVE PLANNING AND CONTROL
DEPARTMENT FOREMAN AND/OR PLANT SUPERINTENDENT GENERAL MANAGER (IF NEEDED)
TO EVALUATE VARIANCE REPORTS AND ACT TO EFFECT IMPROVEMENTS.
IF NO IMPROVEMENT:
COST ACCOUNTING DEPARTMENT IBM DEPARTMENT
TO INVESTIGATE SPECIAL CONDITIONS. TO COMPARE AND POINT OUT CONSISTENT LOSSES.
INDUSTRIAL ENGINEERING
TO FIND MEANS FOR IMPROVEMENT OR TO REVISE STANDARDS.

Fig. 1. How preparation and use of the Labor Variance Report may be accomplished.

Evaluation. A perusal of the labor variance report discloses three apparent causes for this department's losses:

1. The losses are due to overtime put in by the secondhands, card grinders, card grinder helpers, and an oiler borrowed from another department.

2. This overtime was put in only during the week, as shown by the gain on Saturday's cleaning activities. It is clear that the rather unusual gain on the latter activity was due to work performed by section hand and cleaning crew during part of their regular time. This was probably attempted to offset losses due to overtime.

3. The extra activity which led to overtime somewhat decreased the work load of card tenders and can doffers as is demonstrated by the high gain in these activities.

The first thing to do is to find the reasons for the overtime. An unusual repair and machine setting situation might have developed that required such additional work. In such a case, it might have been beneficial to shift some help around, relieving the tension in one spot by taking up the slack in another spot. This possibility is suggested by the gains made on card tending and can doffing activities. It is also possible that the extra oiler was not really needed.

While the foregoing situation is at best a very simple example, it suffices to illustrate one of a multitude of similar situations that can be encountered and solved. In an actual situation the circumstances leading to losses will be much more exhaustively explored. Furthermore, such an evaluation should be much easier when based on actual and recent case histories.

One must be reconciled to finding that every week's report will show certain losses in one department or another. It is in keeping on top of these inefficiencies that firm control of labor costs can be achieved. A bad report without ensuing action is certainly not worth the paper on which a loss is stated.

To assist in deciding which department needs an investigation, an actual-to-standard costs ratio, which shows the percentage loss (or gain) over standard can be used. In this example, the ratio is $1330.26 divided by $1276.06 or

1.042. This 4.2% loss would justify an investigation to correct immediately and to prevent the recurrence of such losses.

It is certain that spending a small amount, say $10.00, over standard in a department costing more than $1000.00 per week to operate will represent only a fractional loss. In such a case an immediate investigation shall not be justified.

However, if these same losses occur consistently, the situation should be examined in an effort to eliminate such losses even if the department is making money on an over-all basis.

Some labor classifications in this story are grouped for the sake of simplicity, but in an actual report card grinders should be separated from card grinder helpers, etc. The more detail the better.

Along with the organization and maintenance of this control, it should be stated that both the engineering and cost departments, as part of their routines and in support of this report, should be continuously engaged in investigating and improving plant conditions, in the revision of standards, and in the improvement of work methods.

Establishing and Maintaining Control. There is no doubt that this report can become a most useful "tool" in the hands of enlightened modern management (it is axiomatic that this tool should not be dulled or chipped). To maintain it there must be an organization, with clearly defined lines of authority, capable of taking the necessary action. Figure 1 suggests a manner of lining up the departments for effective control.

Indirect Controls. Sometimes investigations to uncover causes of excessive labor costs can lead us to correcting other functions such as:

1. Personnel selection—unqualified help, or substandard help, will introduce added costs in the forms of excessive labor turnover, tardiness, absenteeism. . .

2. Purchasing—inferior raw materials may increase breaks, cleaning, stoppages. Changing conditions may warrant more adequate equipment.

3. Maintenance — bad floors, malfunctioning elevators, etc. . . .

4. Production planning and control—excessive changing contributes greatly to costs. Sales department may be promising too much too soon. . . .

5. Quality control—incorrect diagnosis of bad work causes, and inadequate follow-up of machinery performance . . .

Remarks. To facilitate the paper work involved in stating all the necessary data, hectographed forms can be used. Certain data remain unchanged, such as column heads, leaving only the variable information to be typed in.

Conclusion. In determining what is wrong, where the condition is, and how grave it is, there is little doubt that this report, or a similar report, should have far-reaching results in making any firm or department more efficient and, consequently, more competitive. The wealth of other indirect information that it provides can be used for further improvements in supervision, maintenance, etc. Once the principle and technique are understood, such a control measure may be quickly adapted to individual needs.

Non-melting yarn available for mills tests

■ DEVELOPMENT of a process to convert yarn, braid, felts, and fabrics directly to graphite with a purity of 99.9 per cent was recently announced by National Carbon Co., Division of Union Carbide Corp. [T.I. for May, 1959, page 71].

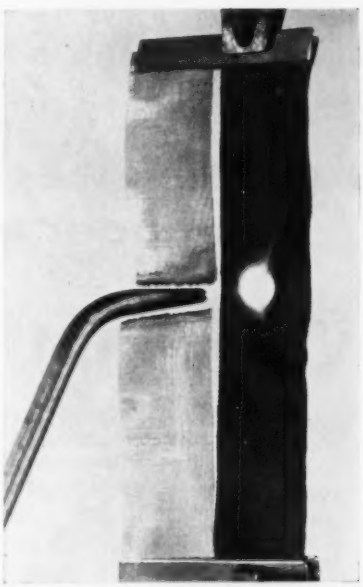
While it is expected that National Carbon will manufacture and supply the graphite cloth, braid, and trim directly to the user, the development is of interest to textile manufacturers since numerous applications are visualized wherein the graphite yarn may be woven or knitted with yarns of other materials, such as glass, nylon, etc., to produce a composite fabric possessing the desirable properties of the several yarns employed. National Carbon does not contemplate producing these composites.

At ordinary pressures graphite has no melting point and only at extremely high temperatures (approximately 6600 F) does it sublime, according to the report. The material gets stronger at higher temperatures —its tensile strength at 4500 F is about twice that at room temperature.

Graphite oxidizes in air at temperatures in excess of 750 F. At the low end of the temperature scale the known properties of graphite fabrics are said to be unaffected by liquid nitrogen at a temperature of -320 F.

It is claimed that graphite textiles are resistant to attack by acids, alkalies, and organic compounds, except for those of a highly oxidizing nature, and are unreactive with many molten metals.

In the production process a yarn or fabric—rayon, for example—is graphitized by electrically heating it to a temperature approaching 5400 F.



To demonstrate the refractory properties of graphite cloth, an oxy-acetylene flame was passed over a strip of stainless steel mesh (left) and onto a band of graphite cloth of square weave (28 x 28). With the flame set low on oxygen so as not to oxidize the graphite, the heat quickly melted the steel mesh (as shown here), but caused only an incandescent glow on the graphite cloth.

In this thermochemical conversion it was explained, the crystalline structure of the material is changed to that of graphite similar to manufactured graphite used for electric furnace electrodes, metallurgical molds, etc.

Experimental quantities of the graphite yarns and fabrics are being produced for test and evaluation by industry and military personnel.

Reduce "*Manufacturing Overhead*" ...by Going Overhead with AMERICAN MONORAIL

R *educe indirect mfg. costs*
E *liminate re-handling*
D *amage to floors eliminated*
U *tilize larger production units*
C *ontrol work flow*
E *xpedite production*

M *inimize employee fatigue*
F *ull use of plant cubage*
G *ain full use of floor space*

C *ut "down time"*
O *vercome floor hindrance*
S *ecure flexibility in material movement*
T *ransfer loads without re-handling*
S *afety for the employee*

An American MonoRail system will bring a quick reduction in manufacturing costs because it can do all the things listed at the left.

Overhead handling puts your ceiling space to work—leaves your floor free of traffic—helps you produce more efficiently in less space.

American MonoRail engineering consultants are available without obligation for the solution of your handling problems.

Write for Bulletin C-1 illustrating hundreds of successful MonoRail installations.

AMERICAN MONORAIL

Engineered Automatic Cleaning and Handling Systems

OVERHEAD HANDLING EQUIPMENT

13106 ATHENS AVENUE
CLEVELAND 7, OHIO

MEMBER OF AMERICAN TEXTILE MACHINERY ASSOCIATION

Top to bottom:
W. B. Etters, meeting chairman
F. B. Dent, speaker
Alex Crawford, discussion leader
Dave Roberts, new Division chairman
Lee Ramey, new Division vice-chairman

400 attended night meeting

S. T. A. spinning discussion

South Carolina mill men reported on their experiences with new-type spinning rings, "Octopus"-type cleaners, top roll weighting, vacuum scavenger systems, and other spinning room topics

Staff report

A RECORD attendance was registered at the spring meeting of the South Carolina Division, Southern Textile Association, held at Fairforest, S. C. The night meeting was attended by more than 400 textile men, with Reeves Brothers, Inc., as host.

Better days may be expected for the South Carolina textile industry, Frederick B. Dent, president of the S. C. Textile Manufacturers Association and president of Mayfair Mills, told the group. He gave five reasons:

(1) The post-war baby crop will begin consuming more textiles as they reach teen age.

(2) Home building continues at a high level.

(3) Industrial production continues to advance — consuming more industrial textiles.

(4) The favorable competitive price advantage of textiles as compared with other industries.

(5) An increase in consumption of consumer durable goods is not expected.

In a discussion group on spinning and preparation subjects conducted by Alex Crawford, Joanna (S. C.) Mills, reports of mill experience with new-type spinning rings with special finish showed that higher speeds are possible.

One mill went from 10,000 rpm to 11,900 rpm spindle speed with no other changes. In this instance the rings had run for four months on 40 frames on a three-shift basis. The frames had 1⅞" rings on 50s yarn. Special-finish travelers were used, and break-in procedure was to run 30 minutes, change travelers; run eight hours, change travelers; run two weeks, change travelers.

In discussing "Octopus"-type cleaners for spinning frames, one mill man said less cleaning is necessary with the revolving overhead cleaner traveling behind the "Octopus." In this mill overhead areas are blown down once each month, and rolls are picked every 48 hours on 6s to 42s yarn range.

The highest spindle speeds reported on 2" rings were 10,800 on 30s, 11,000 on 32s.

Distribution and amount of top roll weighting for drafts of about 30 on coarse hank roving were recommended as follows: 30 on front rolls, 20 on second, 20 on third.

In describing the results of vacuum scavenger systems on top-roll lap-ups, one mill indicated a six-to-one ratio, with more lap-ups in evidence after installation of vacuum scavenger systems. Another mill reported more lap-ups on a 3½-to-one ratio on oiled top rolls, spinning 30s warp yarns.

Where both hard and soft top-roll cots were used in spinning 30s carded warp yarn, experience was better with soft cots on back and front on Casablancas system. Roll buffing interval was five to six months.

Maximum spindle speed run on top-drive filling spindles was 11,500 rpm on 1⅜" rings, spinning 42s yarn with a 3.75 TM. Speed before going to top drive in this instance was 10,000. Quill size was 8" on 2¾"-gauge frame.

A 10-12% improvement in ends down was noted on soft spinning cots, and break was reported as 5-10% better. Antifriction top rolls in spinning showed less variation in yarn regularity in every instance noted.

New officers elected at the meeting were: Dave Roberts, Lydia Cotton Mills, Clinton, S.C., chairman; and Lee Ramey, Riverdale Mills, Enoree, S.C., vice-chairman.

caprolan® TEXTURED YARN SEMINAR

THE NYLON FIBER BY ALLIED CHEMICAL

Courtesy American Lava Corporation, Chattanooga, Tennessee

GUIDE TO THREAD GUIDES

Switching to textured filament yarns? Take a look at your thread guides. Here's why:

Textured filament yarns and spun yarns are not the same

Textured filament yarns are *precision* yarns. Nicked or worn thread guides can cause considerable damage with these new yarns, and may result in streaks and filament breakage. So the best idea is to install satin-finished ceramic guides which have been especially developed for use with nylon filament yarns.

With a few simple adjustments such as this, you can avoid any problems in adapting Textured Caprolan to your product lines. Call our technical service, end-use development and fiber application laboratory staffs at any time for help in making such adjustments.

Fiber Sales & Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York 16, N. Y.

#9 of a series

Over-all view of finished products warehouse reveals orderly, space-saving storage pattern. Main aisle is wide enough for trucks to pass; side aisles are nine feet wide.

Load of wrapped rolls is picked up from floor by tiering truck. The load will be transported to the warehouse and high-stacked in storage racks seen in the other photo.

Lift trucks double available storage space

and cut cost for a North Carolina wet processing plant

Staff prepared Exclusive

AT THE new Collins & Aikman dyeing and finishing plant at Albemarle, N. C., handling costs have been cut in half and storage space increased 100% by the use of industrial trucks.

The 150,000 sq ft plant replaced an older mill in Philadelphia, where all goods were manually handled. The savings at the new plant have been effected by just four trucks. According to C & A records, these savings have repaid the entire original cost of the trucks in less than a year.

Obviously, with a square foot of space costing from $5 to $10, a 100% space increase is worth a considerable amount of money. And with labor costs constantly on the rise, labor savings are equally as valuable.

The four trucks are used in the plant's entire operation, from receiving to shipping. Here's how Warehouse Manager Daniel MaGuire describes the trucks' normal working day:

"They unload materials from incoming trucks, stack incoming chemicals and textiles, start the materials on their way through the dyeing line, store the finished products, and finally load outgoing trucks."

Improvement over the Philadelphia operation has been particularly impressive in the finished products warehouse. It is here that space has been doubled, as goods are now stacked three tiers high, or right to the ceiling, by high-stacking trucks.

The three trucks used in the Albemarle warehouse are operated from a stand-rest driving position. All three vehicles can high-stack loads weighing as much as 4000 lb to heights of 12 ft.

As soon as newly dyed rolls of automotive textiles are wrapped, they are placed cross-wise on a pallet. These pallets have two sides enclosed to prevent rolls from falling off while being moved. The trucks transport the pallet loads of rolls from the wrapping area to the warehouse, where the trucks high-stack them in storage racks.

When materials are to be shipped out, a truck removes a palletized load from a storage rack and transports it to the shipping dock. At the dock, the vehicle actually enters the outgoing motor highway truck to deposit its load, saving considerable handling time.

The fourth truck in use is called a "walkie." This truck is operated from a control handle while walking along with it, thus the designation "walkie." Instead of conventional forks, the "walkie" is equipped with a ram so that it can pick up non-palletized rolls.

This truck picks rolls from the roll-up machine and places them on a four-wheel truck, which is manually pushed a distance of 20 ft to the wrapping unit. Another job of this ram-equipped "walkie" is unloading heavy carpets when they are received at the plant for processing.

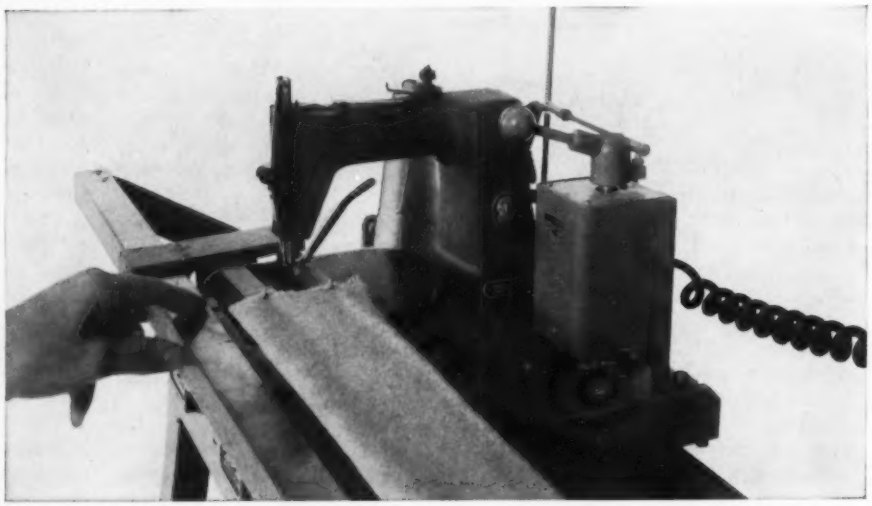
Collins & Aikman also has a roller platform which can be attached to the truck in place of the ram. With the roller platform, various sized cartons are easily loaded or unloaded from vehicles, and the "walkie" becomes, in fact, a multi-purpose unit.

Curtis & Marble's
LC RAILWAY SEWING MACHINES

now featuring a chaining-on device which eliminates much of the trouble with turned selvages during subsequent finishing operations.

These high speed machines are furnished for maximum cloth widths of: 56", 64", 72", 80", 90", 100", 110" and 120", and supplied as a Way with Sewing Machine head to be mounted on a scray, etc., or as a complete moveable unit with legs and locking casters. Either Singer (chain stitch) or Merrow (butted seam) heads available.

New bulletin No. 349A describing the LC on request.



Starting the chaining-on before needle reaches selvages.

MANUFACTURERS OF A COMPLETE LINE OF DRY FINISHING MACHINERY

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CURTIS & MARBLE MACHINE CO.

72 CAMBRIDGE STREET • WORCESTER 3 • MASSACHUSETTS

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ESTABLISHED 1831

52 of 227 mills had perfect accident records last year

■ OF THE 227 companies that completed the 1958 National Safety Council Textile Section safety contest, 52 had perfect records at the end of twelve months. Total number of manhours worked was 423,717,000, less than that reported in 1957 by 9 per cent.

Only 1,588 injuries were experienced last year, a 16 per cent decrease compared with 1957. The twelve-month accident frequency rate was 3.74, a figure 9 per cent lower than the rate for 1957.

Ranking first in the contest were the following: Tallassee (Ala.) Mills Division of Mount Vernon Mills, Inc.; Spray (N. C.) Cotton Mills; Appleton Plant of the Cotton Division of J. P. Stevens & Co., Inc., Anderson, S. C.; Firestone Tire & Rubber Co., Sao Paulo, Brazil; Firestone Tire & Rubber Co., Buenos Aires, Argentina.

Second place: B. F. Goodrich Textile Products; Medical Supply Co., Rockford, Ill.; Winnsboro (S. C.) Mills, Division of U. S .Rubber Co.; Durst Plant of Greenwood (S. C.) Mills; the Tilton (N. H.) Plant of J. P. Stevens & Co., Inc.; and Plant No. 6 of Cannon Mills Co., Concord, N. C.

Third place: Joanna (S. C.) Cotton Mills Co.; Safety Clothing & Equipment Co., Cleveland, Ohio; the Slater (S. C.) Plant of J. P. Stevens & Co., Inc.; Plant No. 7 of Cannon Mills Co., Salisbury, N. C.; and Harris Plant of Greenwood Mills.

1958 fiber consumption down 3 per cent in U.S. mills

■ U. S. MILL consumption of the major textile fibers for the period 1920 to 1958 is presented graphically in the accompanying chart which was recently published by the Textile Economics Bureau, Inc.

As shown by the black curve at the top of the chart, the quantity of fiber used in 1958 dropped to a point just below the 6-billion-pound line. Actually, the total was 5,979,200,000 pounds, a decline of 3 per cent from 1957, according to the Bureau.

65.9 per cent of the 1958 poundage was cotton, 5.8 per cent wool, 0.1 per cent silk, and 28.2 per cent man-made fiber.

Long Term Consumption Trends. On an over-all basis, consumption of the major textile fibers is reported to have increased from an annual average of 3.53 billion pounds in the 1920-1929 period to an average of 6.43 billion pounds in the 1950-1958 period.

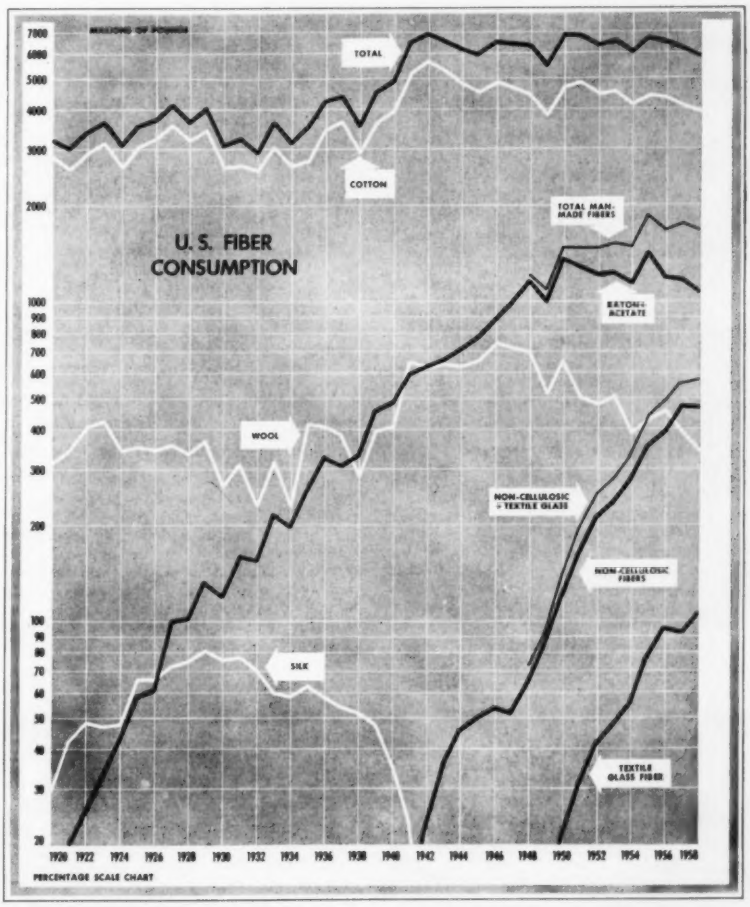
The average annual consumption of cotton in the 1950-1958 period at 4.37 billion pounds was 7½ per cent below 1940-1949 period but well above the 1930-1939 average of 2.98 billion pounds. Compared with the 1920-1929 average of 3.06 billion pounds, the 1950-1958 average annual consumption was 43 per cent higher.

The Bureau pointed out that the trend of raw wool consumption closely paralleled cotton during the 1920-1929, 1930-1939, and 1940-1949 periods; but since World War II there has been a sharper decline in wool usage. Nevertheless, wool use in the most recent nine-year period at an average of 457 million pounds per year was 27.5 per cent larger than the 1920-1929 average.

The average annual use of the man-made fibers in the 1920-1929 period was 58 million pounds, and successive increases have taken place until the average annual use of these fibers was 1.59 million pounds in the 1950-1958 period.

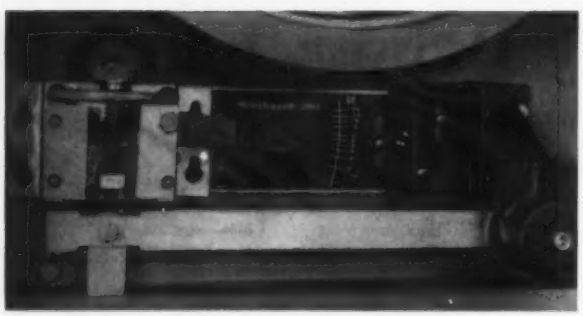
Per Capita Consumption. In 1958 the per capita consumption of all fibers was reported to be 31.1 pounds, 1.2 pounds less than in 1957.

Cotton used amounted to 19.6 pounds, man-made fibers, 9.1; and wool, 2.4.



SET IT AND GET IT
on BLENDING SYSTEMS by

FIBER CONTROLS



IMPROVED FEATURES of Fiber Controls SYNCHROMATIC BLENDING SYSTEM make it easy to maintain constant quality, reduce waste and facilitate cost control — while maintaining an accuracy of blend of plus or minus 1%.

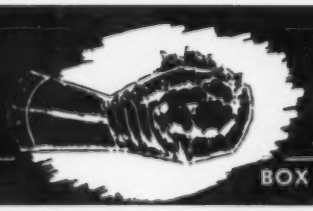
Hunting for proper weight on Blending equipment is eliminated by use of this precision weighing system (see middle photo at left) and shows visually the weight being blended from each feeder. Direct check by supervisor while system is operating eliminates set-up errors. Just SET IT and GET IT.

The Weight Calibrator adjusts from 4 oz to 36 oz by 1/8 oz deviations. Blend changes is reduced to calibration changes and weight is held within 2% deviation for all dumps — or an average of less than 1% deviation for a full run.

Adjustable Magnetic Vernier weighing adjustment assembly with snap-action (see bottom photo). This patent pending feature enables any weight variation of 1/8 oz to be quickly and accurately set with the calibrator to give any desired weight. The snap-action of the magnet assembly produces quick and accurate cut-off of the weighing assembly when it receives the proper set weight, and maintains set accuracy without check or resetting.

Weighing bracket assembly is constructed of aluminum tubing for light, rigid construction — Mounted on instrument ball bearings to give unfailing movement with weight as low as 1 oz and still not transmit machine vibration into the weighing assembly — thereby maintaining accurate weight as set. SET IT and you'll GET IT with FIBER CONTROLS improved SYNCHROMATIC BLENDING SYSTEM. Has proven itself to Management, regardless of Mill size.

We invite your inquiry concerning more complete details of our Blending and Cleaning equipment.



FIBER CONTROLS CORPORATION

BOX 1358 *GASTONIA, NORTH CAROLINA*

Wool mill maintenance *(from page 98)*

nance program is now operating in the warp, rewinding, garnett, scouring, and wet finish departments. In all areas, progress is being made and the results are as good as or better than expected.

Other items under this type of control are the humidity systems over the entire mill, vacuum stripping equipment, air conditioning, apron building, bobbin repair, and a machinery cleaning program.

One of the major developments to come out of the new program is the use of specialized skills. The first woolen spinning frame required three weeks for overhauling and all labor used was highly skilled. By specialization, a better job is done today in five days, and over half the labor is semiskilled or nonskilled.

The same has been accomplished on woolen cards, where the first one required seven weeks and today less than ten days are needed.

Measuring Accomplishment. The biggest problem with any maintenance system is the proper measurements of its effectiveness.

How much credit should improved maintenance be given for improved quality when everyone is working for quality improvement?

What part of increased production should be attributed to improved maintenance when everyone is working to increase production?

Because of the difficulty of answering questions such as these, management usually judges maintenance by what it costs rather than what it accomplishes. Even on the latter score the maintenance system at Chatham passes the test, since costs *have* been reduced.

However, the real value of good maintenance is in its effect on production, quality, and waste. Although at Chatham no attempt has been made to assign a monetary value to these effects, the contribution of the new maintenance program has been of major proportions in over-all cost reduction.

Because a preventive maintenance program must be tailormade to fit each individual operation, management at Chatham looks on this program more as a philosophy of maintenance than as a prefabricated plan of assigning maintenance jobs. Since its inception the program has undergone a multitude of changes, each one based on the experience to that date, and each one designed to make the program more consistent with the basic philosophy.

Maintenance personnel at Chatham are much more excited about the future possibilities of their program than they are over past accomplishments. The new program has uncovered potentials for future savings even greater than have been brought about to date.

RECORD OF PARTS USED

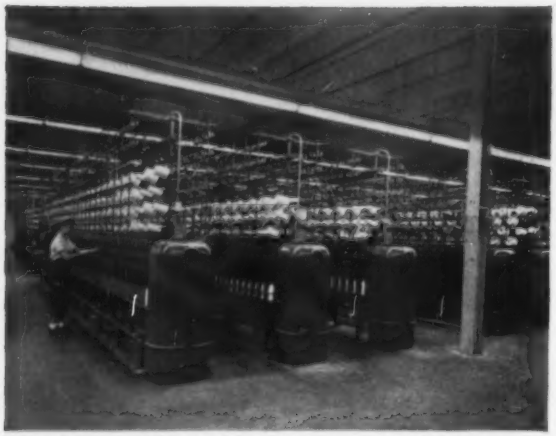
MACH. NO. 19

MACH. NO. WHITIN CARD MODEL NO. SERIAL NO.

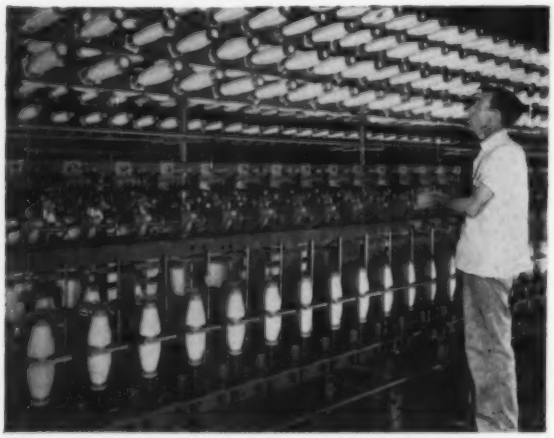
DATE	REQ. NO.	BIN NO.	AMT.	PART NO.	COMMENTS
1-24-59	2240	502A	1	No. 50	Morse Chain Link
	2240	1131	1	168Y 72	29T Gear
	929	1720	1	C38-305	Sprocket - 15T.
	1002	773	1	30" Long	Drum gear Chain
	1002		1	15T	Sprocket (Used)
2-4-59	929	1600	1	10T	Sprocket
2-9-59	2240	1113	1	C38-703	Drum Drive Bracket
	2240	1131	1	108-Y-72	Drum Drive Gear - 29 T
	2240	1139	1	108-Y-71	Intermediate Gear - 40T
	2240	462	1		Drum Drive Shaft
	2240	535	1		Driving Pulley Shaft
	2240	250	1	No. 5	Woodruff Key
2-18-59	937	59	1	C28-760	Int. Gear Bracket
2-20-59	2240		1	1BB-80	Spool Drum Drive Belt
2-24-59	2240	2082	1	557-U-52	Wood Bushing

See Some of Many Results You Get

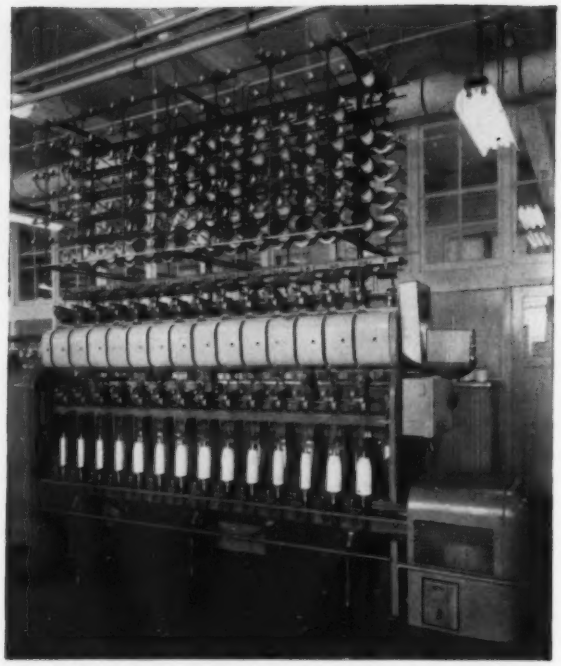
from the Model 10 Ring Twister



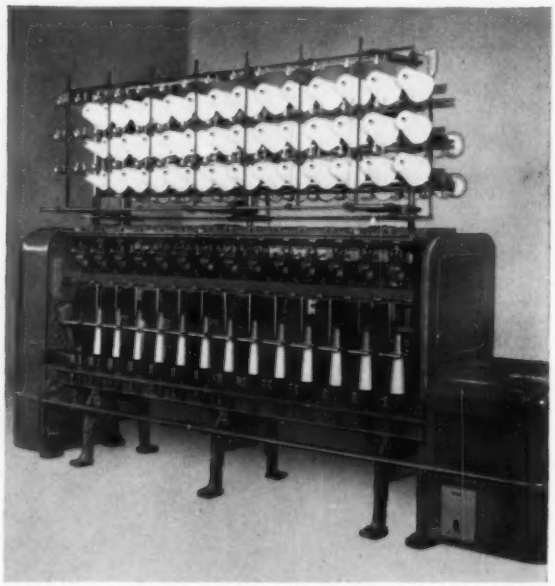
Worsted, spun synthetic and metallic yarns can be plied from cones, and taken up on large packages.



Glass yarn can be twisted from pirns to double-taper packages, and be used for filling and warping without rewinding.

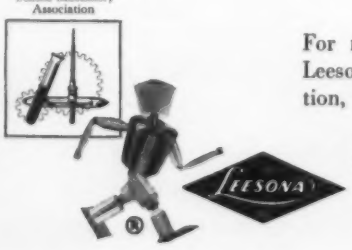


Only the Model 10 can use the No. 511 Saaba* attachment, to process uniform, top quality Saaba, the last word in textured yarn.



Model 10 can take up yarn on cones, also produce straight wind, taper-top, and double tapered packages (filling or warp wind).

Member American Textile Machinery Association



23.7.7

For more information on how the versatile, low-maintenance, Leesona Model 10 Ring Twister can improve your twisting production, write for Bulletin 10-A.

UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence 1, R. I.

Sales Offices: Boston, Philadelphia, Charlotte, Atlanta, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland.

SAABA is a trademark of Universal Winding Company

Koppers dyes are right for every fiber

Quality color in modern living is of utmost importance. To achieve consumer-pleasing shades of vibrant, long-lasting color—regardless of individual fiber characteristics—count on dependable Koppers dyes.

From a wide range, you can select the quality dye that will meet the most stringent requirements. Through intensified research programs, Koppers dyes have attained excellent processing characteristics for good build-up, even exhaustion and outstanding leveling properties.

Whatever your dyeing problem, contact your Koppers representative. Our technical service and laboratory facilities are always available. VMA 6408

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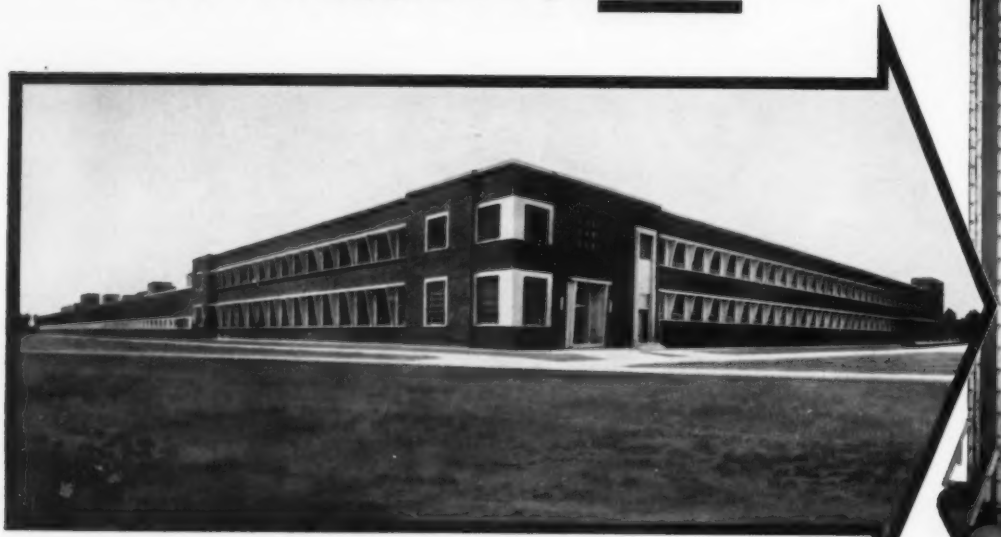
(FORMERLY AMERICAN ANILINE PRODUCTS) PLANT: Lock Haven, Pa.

BRANCHES: Providence, R. I. • Philadelphia, Pa. • Paterson, N. J. • Chicago, Ill. • Charlotte, N. C. • Chattanooga, Tenn. Columbus, Ga. • Los Angeles, Calif.

IN CANADA: Dominion Anilines & Chemicals, Ltd., Toronto, Canada • Montreal, Canada

The Springs Cotton Mills' lint problems are wrapped up *here!*



The Springs Cotton Mills' Grace Bleachery, Lancaster, S. C. Air-conditioning system designed and installed by Buensod-Stacey, Inc., Charlotte, N. C.

AAF Auto-AIRMAT filters provide lint-free air for Grace Bleachery

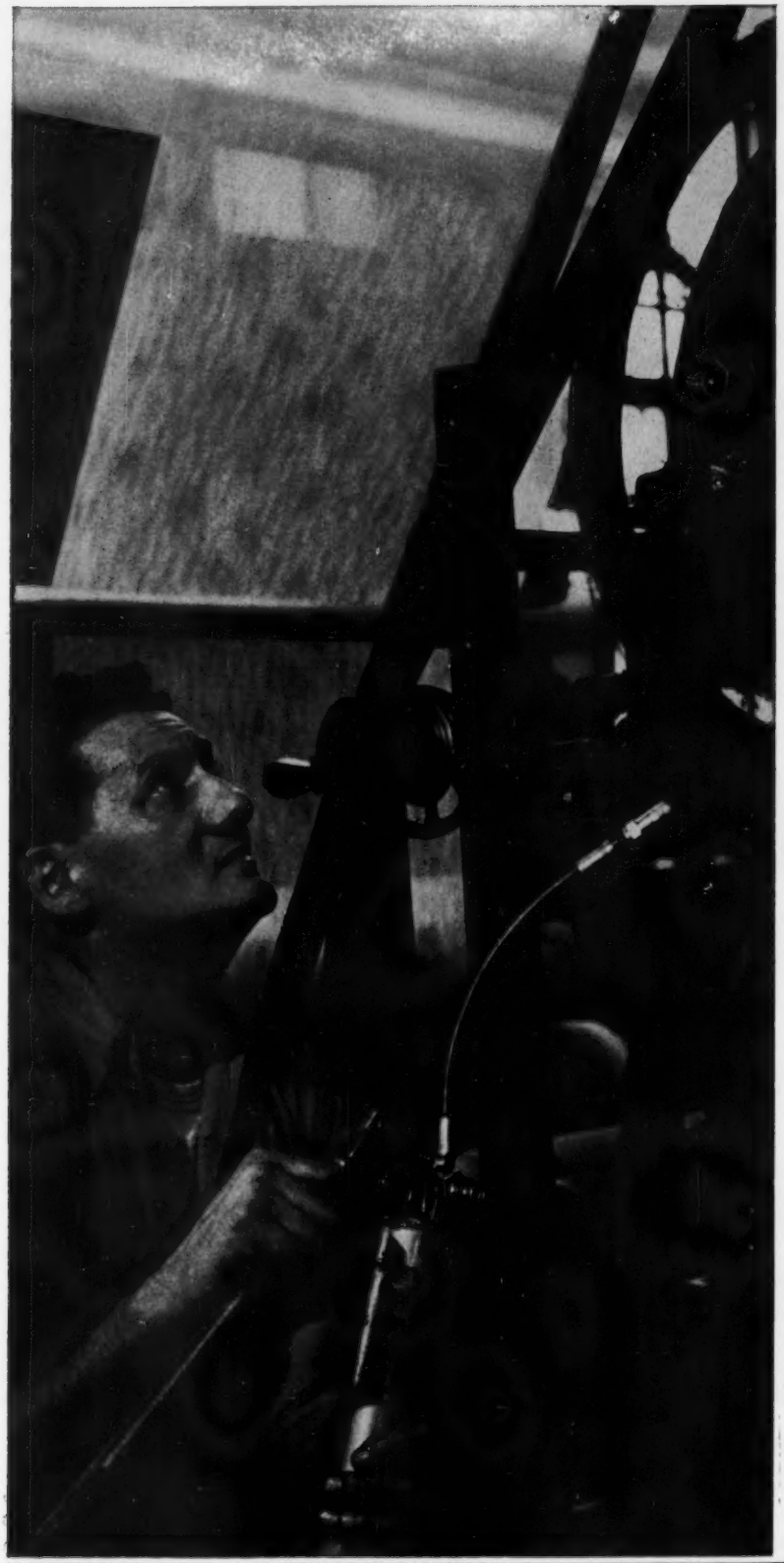
You won't find any "lint on the loose" at Spring Mills' Grace Bleachery in Lancaster, South Carolina. Automatic lint filters—AAF Auto-AIRMATS—are standing guard at eight air conditioning systems supplying 120,320 cfm of clean air.

Auto-AIRMAT is the *only* filter designed to remove lint fibres from the air and clean itself at the same time! Airmat filtering material, winding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—rewinds into easily disposable roll at bottom.

If you have a *lint problem,* get all the facts on the *lint filter* — AAF's Auto-AIRMAT. Call your AAF representative or write for Bulletin 234. Address: Mr. Robert Moore, American Air Filter Co., Inc., 275 Central Avenue, Louisville, Kentucky.

AAF **American Air Filter**

BETTER AIR IS OUR BUSINESS



Needs less "make-up" grease with NEBULA® EP

Measured in terms of lower depreciation, less down-time and costly overhauls—your maintenance man makes a most significant contribution to your profit picture. That's why it pays to supply him with Nebula EP . . . the multi-purpose grease that has no rival, especially under high heat and extreme pressure conditions.

Nebula EP requires less make-up grease because it stays put, resists thinning and refuses to run out at the high temperatures created in textile equipment bearings. Even in bearings that are subject to extreme heat, like the "dry can" bearings shown here, Nebula EP stays on the job. In addition Nebula EP offers remarkable extreme pressure characteristics — making it the ideal multi-purpose grease for use in almost every machine and bearing found in textile equipment.

For more information on versatile Nebula EP, or technical assistance available through a conveniently located Esso Sales Service Laboratory, contact your nearest Esso office, or write: Industrial Lubricants Division, Esso Standard Oil Company, 15 West 51st St., New York 19, New York.

Esso

In Industry after Industry..."ESSO RESEARCH works wonders with oil"

"HAND-FRAME LOOK" for all your inlaid pattern socks

That's the "READING" CK-A story. It's the most versatile inlaid pattern machine ever built. You get argyles, overplaids, diverse inlaid patterns — all with the "hand-frame look" that makes sales increase. And with this style versatility you get straight-edge color separation... and clean-edge circular sutures never before possible in machine production.

Knitting Machine Division
TEXTILE MACHINE WORKS • READING • PENNA.
Builders of Textile Machinery Since 1900

The "READING" CK-A
Circular Knitting Machine

KNITTING SECTION

Siphoning action of steam gun draws cleaning mixture from barrel.

Unique cleaning for F-F machines

Staff prepared Exclusive

THE OPPORTUNITY to improve cleaning procedures on full-fashioned knitting machines was seized to advantage at Sterling Hosiery Mills, Spindale, N. C. This modern knitting mill now employs a unique combination of equipment and materials to clean knitting equipment thoroughly, without damage to delicate parts, and with minimum labor and time requirements.

The cleaning program emerged as part of the effort to implement the high first-quality standards in force at Sterling, according to T. W. Dorsey, superintendent.

Machine parts are sent to the factory for reconditioning at intervals. These parts include picot bars and knock-over bits, as well as sinkers, needles, and welt hooks, which are replaced with new ones.

While parts are at the factory for reconditioning, a protective tarpaulin is placed over adjacent machines, and a steam gun is used to clean the entire knitting machine. A solution of cleaning powder, hot water, and glycerine is mixed in a 55-gallon drum to supply the steam gun through an additional hose. The steam line to the gun has a siphoning action, which draws the cleaning mixture from the drum.

(Continued on page 149)

Franklin Process

YARN DYEING SERVICE

Its Latest Contribution to Quality Processing

The photograph herewith shows one of our yarn carriers being delivered direct from a package dyeing machine to the very latest thing in yarn drying equipment—a high pressure, recirculating type dryer. This new method of drying leaves the yarn clean and in excellent condition for subsequent operations.

In addition to keeping up to date on materials handling methods, Franklin Process Yarn Dyeing Service also offers you these advantages: —

FRANKLIN SPRING. This spring permits harder packages to be compressed less and softer packages to be compressed more into a column of uniform density. Uniform penetration of the dye liquor and uniform shades result. The 1⅝″ diameter tube lessens the differential between the inside diameter and the outside diameter of the package, so the dyestuff does not tend to concentrate on the inside. The liberal spaces between the wire spirals also permit a free flow of the dye liquor. White "cross overs" seldom occur.

Franklin Process COMPANY

A DIVISION OF INDIAN HEAD MILLS, INC.

Dyers of cotton (carded, combed, mercerized) • Orlon* (yarn and tow) • Acrilan • Dacron† Textralized® • Helanca • Spun Nylon • Spun Rayon • Blends Wool & Worsted Yarn – all yarns on Franklin compressible spring exclusively.

PHILADELPHIA • GREENVILLE
CHATTANOOGA • FINGERVILLE, S. C.
New York Office–111 West 40th Street
Providence Office–611 Turks Head Bldg.

*Trademark for Dupont's acrylic fibre.
†Trademark for Dupont's polyester fibre.

LARGE DYE BATCHES. If you need long runs of one shade, we can supply that shade in ONE DYE BATCH—up to 2000 lbs. in size. Thus you don't have to worry about mixed dye batches.

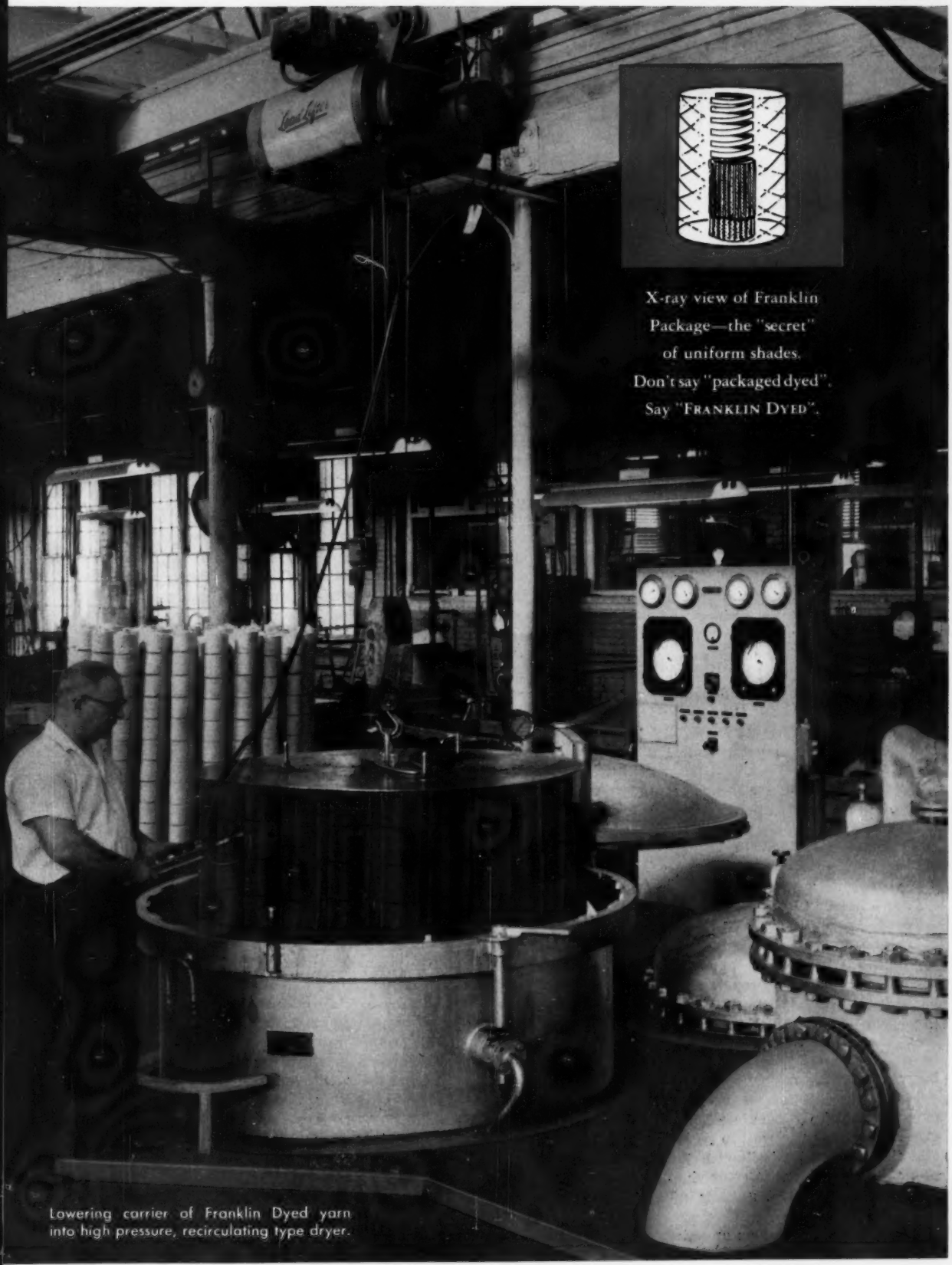
MULTIPLE DYEING MACHINE SIZES: — we have 14 different sizes of machines in our dye plants. Thus we can fit the machine to the poundage of yarn required. The proper ratio of dye liquor to yarn poundage is maintained. The chances of offshade work are minimized. Multiple batches of the same shade are unnecessary.

UNEQUALLED EXPERIENCE. Nothing takes the place of experience in yarn dyeing and we have an unequalled record in this respect. In our 48 years of experience we have dyed more than 700 million lbs. of yarn for practically every branch of the industry.

LABORATORY CONTROL. Our experimenting is done in the laboratory — not in the dye house. When the dye house receives your yarn, it also receives definite formula instructions. The necessity for re-processing is minimized and the quality of your yarn is safeguarded.

CONVENIENTLY YOURS. Four plants and two additional sales offices in major textile areas make Franklin Process Service "conveniently yours". Since it costs no more, why not use it?

654-8



X-ray view of Franklin Package—the "secret" of uniform shades. Don't say "packaged dyed". Say "FRANKLIN DYED".

Lowering carrier of Franklin Dyed yarn into high pressure, recirculating type dryer.

Control knitted sample cost

Sample making is vital, but you must know when to stop; here's help in telling when

by Harold R. Danzis
George S. May Co.

Exclusive

ONE OF the most vexing problems mill management is concerned with under present day operating and market requirements is that of making samples. The sales division not only wants the samples promptly and with meticulous attention to detail and color range, but it expects the mill to do this job without interrupting in any manner the orders which are already in process or about to be put in process.

On one side of the fence we have the mill operating executives trying to meet delivery schedules by solving the daily problems created by deficiencies in personnel, mill layout, equipment, and raw materials.

On the other side are the members of the sales force—"the men on the firing line"—who have to analyze the market, evaluate their customers' needs, and try to stimulate these needs to a point where a firm order can be secured.

These two objectives were of course always an integral phase of any well run textile operation. They were formerly brought into balance by the chief executives of the company in such a manner that the sales organization was reasonably certain to have all of its requirements met.

Within the last few years, however, the carefully calculated policies which served so well to reconcile the zeal of "Sales" with the practical limitations of "Production" have been losing their effectiveness.

The market's voracious appetite for samples is such that Sales is being deluged with requests for original samples, variations of existing samples, and wider ranges of sizes and colors for a given sample. Sales, not having an adequate standard or policy by which to evaluate the flood of requests, has been channeling the customers demands to Production with the bland suggestion that the importance of the customer involved is such that the request must be honored—and promptly too!

On the face of it, such requests are not unreasonable. Customers *are* important. Orders *are* difficult to obtain. Competitors' lines *must* be equaled in price, style, color, and design. All of these considerations are vital and mill executives are perfectly willing to concede this.

Where Must Sample Making End? There is a point however beyond which a mill cannot go with respect to sample making if it is to continue to be a mill. The operating executives must not continually be compelled to impair productive efficiency by stopping ribbing and knitting machines designed for long runs in order to run off a dozen or two of samples.

The dyehouse must not continually be compelled to experiment with color combinations on new materials and at the same time be under extreme pressure to process orders already on the books. Piece workers, jealous of their ability to earn good wages by virtue of many years of experience, must not continually be taken off productive work and put on a day-work basis for small lots of samples.

This increasingly serious problem can be solved by a planned campaign which has as its basic principle the furnishing of sufficient sample-making cost information to sales. Such information would enable Sales to be more selective in choosing which accounts must be taken care of. Only by so doing can Sales be educated to the fact that lack of selectivity in the area of sample making may contribute to a poor profit position for the mill.

Cost System for Samples. The procedure described and the forms shown will, if used judiciously, enable the mill executives to furnish vital labor costs for samples to Sales. Then and only then can Sales be in a position to use discretion and hold requests for samples to a minimum.

The type of sample-making cost data obtained as a result of using the procedure will be very helpful to Sales because it will make easier a decision to go along with a customer's request or diplomatically modify it or refuse it. Sales will appraise each request from the point of view of the customer's potential sales volume to make certain it is commensurate with the expenditure involved.

The end results of the campaign will be beneficial to the mill, and of course anything done to improve the mill's efficiency will directly enhance Sales' ability to cope with the extremely cost-conscious market.

Any mill, large or small, plagued by the sample-making requests of a hard hitting sales organization will be pleasantly surprised at the results it will obtain when sufficient reliable data become available. Even those mills which have a pilot plant set up exclusively to make samples can improve relationships between Sales and Production by utilizing the basic principle of this procedure.

Bear in mind that the proposed

Here's How to Get Accurate Sample Cost Data

SAMPLE MFG. ORDER

OUR No. _____ ISSUED _____ AUTHORIZED BY _____

CUSTOMER _____ CUSTOMER No. _____ DELIVERY DATE _____

Style	Color	Dozens	Size	Needle	DEPT.	Estimated Labor		
						Hours	Dept. Rate	Labor Cost
					RIB			
					KNIT			
					DYE			
					BOARD			
					FINISH			
					TOTALS			

SPECIAL INSTRUCTIONS

Ribbing _____

Knitting _____

Dyeing _____

Boarding _____

Finishing _____

■ THE "Sample Mfg. Order" shown at the left is prepared by the executive authorizing the making of the sample. Four copies are prepared and are distributed as shown.

The "Mill" copy is put in a plastic envelope and goes with the sample through the mill. Each department head is responsible for entering the total man-hours expended on the sample in his department.

The cost department calculates the departmental labor cost and the total labor cost by applying the hourly rates involved. Admittedly, 100% accuracy is not obtained, but the figures are close enough to serve the purpose.

The calculated data are posted to all four copies, and the sales (blue) copy is sent immediately to the general sales manager. Any other pertinent data, such as unusual finger expense, difficult pattern set-up, machines down awaiting OK, etc., are also noted.

A red tag accompanies the samples at all times, distinguishing them from regular lots. Each sample is identified by a number.

The person in charge of sample production can easily follow the progress of samples through the mill by using the "Sample Register" form shown below.

SAMPLE REGISTER

Sample No.	CUSTOMER	Customer No.	Order Received	Order Issued	Delivery Date Expected	Delivery Date Actual

campaign is not to improve costs, efficiency, or delivery dates; this will come in due course. The objective is to lessen the tension between Sales and Production in a practical manner and still continue to do a sample-making job which will be satisfactory in every respect.

If it rolls on an axle or turns in a bearing or rides on a shaft if it slides in a groove or moves on a pivot if it bores or cuts or transmits pressure

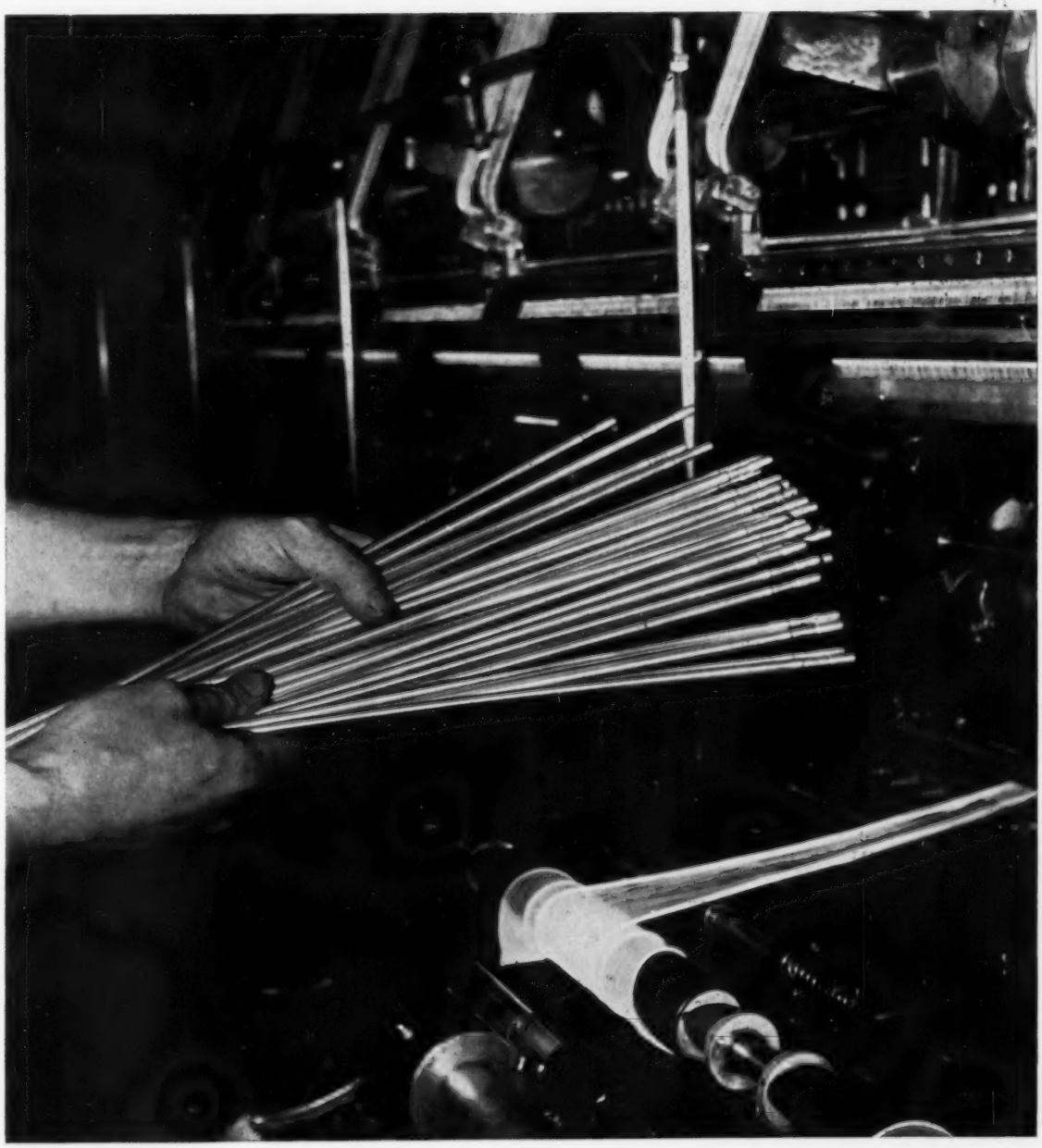
one of Sinclair's 500 specialized lubricants is designed to make it work better. For answers to your lubrication problems, write today to

SINCLAIR REFINING COMPANY

Technical Service Division
600 Fifth Ave, N.Y. 20 N.Y.

Textile Industries KNITTER HINTS NO. 56

Keep welt rods polished



Nicks and burrs damage the delicate fabric

Trim along this line to post on bulletin board in knitting department

Knit textiles seen displacing woven goods for many uses

■ DURING the past decade production of knit fabrics for women's outerwear increased 200% (see Table 1) and production of women's and girls' sweaters expanded 10 times as fast as the population (see Table 2). These are two details in a definitive analysis of the growth of knitted textiles in the United States.

The report, prepared by Ruth Jackendoff, director of the Department of Economics and Statistics at the Wool Bureau, says, "Knitting as a technique for producing consumer textiles has achieved a significance during the past decade which promises to rival weaving in many end-products in the future." Miss Jackendoff gives two reasons for this trend:

"First, machine knitting is a faster and more economical technique of textile production. A large proportion of knitted products are produced and shaped to their final form directly on the knitting machine rather than cut from flat textiles and then sewn. Secondly, knitted products are especially suitable for modern, easy-care living and for traveling, which is expanding steadily. Knit garments seldom need pressing after being packed or worn, and many may be worn or used without pressing after washing or cleaning."

The production of broad-woven textiles was barely maintained at 12 billion yards between 1947 and 1957, Miss Jackendoff pointed out. By contrast, she said, yarns consumed in the production of knit cloth for sale increased 47% from almost 147 million pounds in 1949 to almost 216 million pounds in 1957, and yarns consumed in knit underwear, nightwear, and outerwear increased 44% from over 169 million pounds in 1949 to over 244 million pounds in 1957.

Outlook for Wool in Knit Products. There is reason to believe that wool's competitive position in the knitgoods market has stabilized and may well have started to recover, according to Miss Jackendoff. Two major developments were cited in support of this optimistic view:

1. The price of raw wool has been very competitive during the past year. While it is anticipated that the price of raw wool during 1959 will recover from its extremely low recent level, it is not expected to rise beyond a level that would make it non-competitive with man-made fibers.

2. Teen-age girls are switching back to wool sweaters. Wool may account for 30% to 40% of the sweater

TABLE 1

Shipments of Knit Cloth for Sale
Outerwear Fabrics

Year	Overcoating, Topcoating, Ski & Snow Suit Fabrics (1000 lb)	Dress & Suiting Fabrics (1000 lb)
1947	7,792	4,347
1948	6,319	4,022
1949	7,778	6,871
1950	10,287	9,441
1951	8,786	7,203
1952	11,269	9,540
1953	12,487	10,043
1954	16,342	8,806
1955	15,874	9,419
1956	14,051	13,714
1957	12,440	13,216

Source: U. S. Bureau of the Census.

TABLE 2

Production of Sweaters Compared with Civilian Population
1957 and 1947

Sweater Class	Population Division	Sweaters Produced: Thousand Dozen 1957	1947	Per cent Change	Civilian Population: Millions 1957	1947	Per cent Change
	GRAND TOTAL	12,302	6,677	+ 84	168.4	142.6	+ 18
Men's	15 yr & over	1,853	1,838	+ 1	55.5	51.7	+ 7
Boys'	5 to 14 yr	861	371	+132	16.8	11.3	+ 49
TOTAL	5 yr & over	2,714	2,209	+ 23	72.3	63.1	+ 15
Women's, misses' & jr.'s	15 yr & over	6,862	2,375	+189	60.8	54.2	+ 12
Girls' & teenage girls'	5 to 14 yr	858	340	+152	16.1	10.9	+ 48
TOTAL	5 yr & over	7,720	2,715	+184	76.9	65.1	+ 18
Children's & infants'	under 5 yr	1,687	1,753	— 4	19.2	14.4	+ 33
Not specified		181					

Source: United States Bureau of the Census.

market this year compared with 20% to 25% during 1958, the report indicated.

Technical developments already make it possible to permanently mothproof wool knits with little or no cost to the consumer, and machine washability without felting shrinkage is promised in the very near future, Miss Jackendoff said. These plusses will enable wool to compete with other fibers on their performance level, as well as providing consumers the warmth, durability, resilience, and flame-resistance of wool, she concluded.

How to control shrinkage of jersey knits will be topic for joint study

■ A STUDY of how to control shrinkage of jersey knit goods will be undertaken jointly by the National Institute of Drycleaning and the Jersey Institute. The two Institutes laid plans for this at a meeting recently in Silver Spring, Maryland, at the headquarters of NID.

The study will attempt to determine the cause of increasing numbers of consumer complaints of shrinkage which occur after drycleaning jersey garments made of 100% wool, and Orlon and wool blends.

Research carried out by NID last year showed that the shrinkage occurs in steam finishing or pressing, according to the announcement, not in the drycleaning process itself. Complaints of this type were first noted by NID early in 1958. Since then the number of complaints handled by the Institute's Textile Analysis Department has increased steadily. Last year a total of 264 complaints were investigated. So far this year, 127 cases of jersey shrinkage have been received.

Speaking for the representatives of the Jersey Institute, Ben Heller, president of William Heller, Inc., said that a great deal of progress has been made in recent years in improving the serviceability of jersey fabrics. He said, however, that it is well known that jersey fabrics have certain inherent characteristics of construction which require special consideration. He said it is significant that the rise in shrinkage complaints parallels the development of a printed jersey market in the latter part of 1957.

It was agreed that the NID complaint record will in the future make a distinction between print goods of 100% wool and Orlon-wool blends, and plain shade fabrics. Mr. Heller said this is important because the control of factors which induce shrinkage in jersey is much more difficult in converting and commission printing operations than it is among the vertical type jersey knitting firms who do their own dyeing and finishing, and have many years experience in the manufacture of jersey.

The proposed study will include an investigation of various steam finishing methods used in drycleaning with a view to determining to what extent shrinkage can be controlled by special steam finishing techniques. It will also undertake to develop a testing procedure which will provide the manufacturer with a means of evaluating jersey fabrics for shrinkage control in terms of recommended methods of steam finishing. Both piece goods and garments will be used in the study.

Machine cleaning

(from page 141)

The cleaning compound, steam, and water do the cleaning, and the glycerine content keeps the machine from having a dry, harsh finish after cleaning.

The machine is gone over once thoroughly with the steam gun and cleaning solution. Then the solution is allowed to stand on the machine for about 45 minutes so that it will have time to penetrate and dissolve grime and oily deposits.

The machine is then blown off with the steam gun and solution a second time, until all parts are clean.

Finally, the steam gun is used to spray one and a half gallons of needle oil over machine parts for lubrication and to prevent rust.

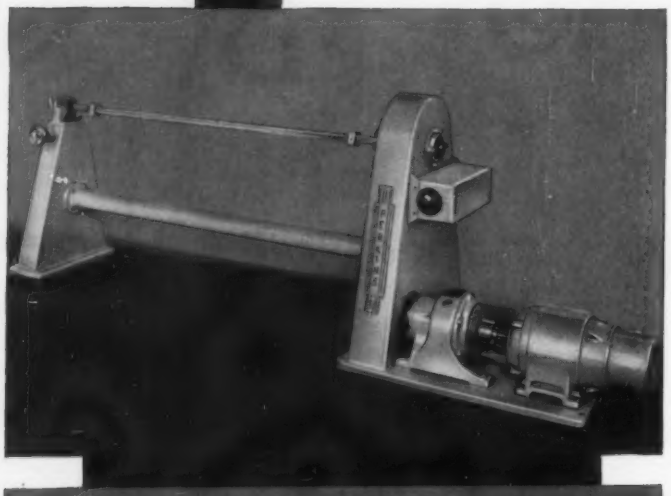
Reconditioned parts are installed when they are returned from the factory, and the machine is made ready for production again.

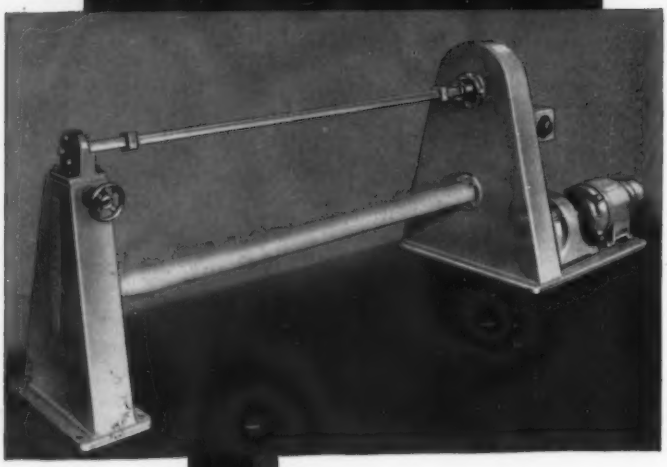
The cleaning operation is done by two men, and is completed in one day (about 8 hours). Formerly, two men took four days to clean the machine with solvent, brushes, and rags.

T. W. Dorsey, Sterling's superintendent, examines a machine just before cleaning starts.

NEW PERKINS WIND-UP

saves maintenance time and labor





Replace your old-fashioned WINDER NOW . . . with this modern

WIND-UP PACKAGE UNIT

recently developed for the Textile and Paper industries

Eliminates adjusting during winding operation.

Set to desired tension on dial and the rest is automatically controlled by the torque-speed characteristic of a specially designed A.C. torque motor.

ADDITIONAL FEATURES

- **Reel shaft running in anti-friction bearings**
- **Provision for in and out adjustment of reel shaft and lateral adjustment of reel shaft**
- **Drive totally enclosed in steel box-type frames**
- **Easy installment**
- **Low cost**

B. F. PERKINS & SON, INC.

HOLYOKE, MASSACHUSETTS

"... now we add 3 cc. of $KMnO_4$, neutralize to litmus with H_2SO_4, and boil six minutes . . ."

We've often wondered where Si gets his formula ideas!

Whatever the source, he manages to keep Seyco textile chemicals the best in the field.

Ask the man who uses them.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

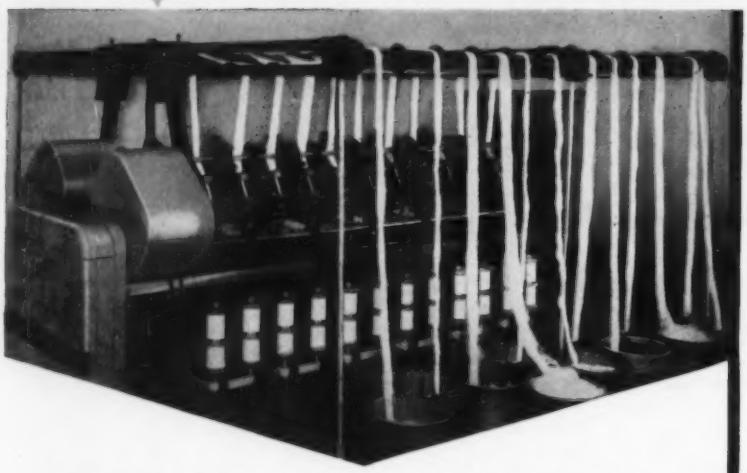
SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

Spinster

by SACO-LOWELL



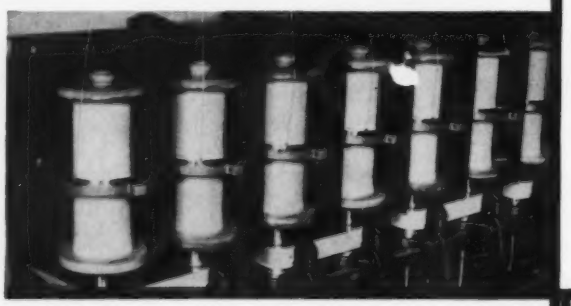
THE SURE WAY TO BIGGER PACKAGES & HIGHER SPEEDS

when spinning carpet, hand knitting and coarse count worsted yarns

The most efficient large package frame for wool and long staple synthetics. Handles staple ranging from 1½"-7" without requiring additional major parts or time consuming changeover.

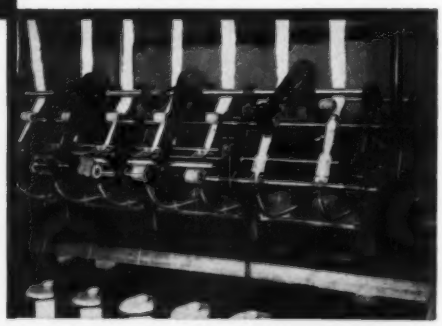
Creels tailored for either sliver or roving per customer specifications.

Available in both single and double apron drafting systems.



Note the unique method of supporting rings and type of bobbin used. High-Speed Vertical Rings are mounted on a rugged bar supported by the lifting rods. There is no conventional ring rail. Full bobbin will weigh from 3½ to 4 lbs.

Closeup of spinster drafting element with waste collecting system. Does not require two different cradle widths.



If your mill is producing coarse count worsteds or high grade hand knitting yarns on conventional equipment, it will pay you to have our engineers prepare a "Forecast of Savings" based on an installation of new, modern Saco-Lowell Spinster Frames. Contact your nearest Saco-Lowell Office now.

THE STANDARD OF QUALITY AND PERFORMANCE Since 1813

SACO-LOWELL TEXTILE MACHINERY DIVISION

SACO-LOWELL SHOPS

Executive & Sales Offices — EASLEY, S. C.

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HOW OTHERS MANAGE

A simple way to keep abreast of spinning efficiency

THE EDITORS:

To obtain the maximum production of spindles in operation is the goal of all yarn mill superintendents. This is a concise system of determining the efficiency of operation, and, as such, it helps the superintendent "keep his eye on the ball."

It consists of a day-by-day tabulation (see below) of the total number of spindle hours operated together with the predetermined number of spindles set up to operate at the start of each week, and it is recapped weekly on a six-column analysis pad.

Column 1 indicates the period of time being reported.

Column 2 indicates the number of spindles set up to operate at the start of the period.

Column 3 indicates the basis of weekly production in hours. For example, over a full week (excluding Sunday) a mill operating three shifts, six days, would indicate a

1	2	3	4	5	6
Week ending	Number of Spindles scheduled to operate	Weekly production basis (hours)	Maximum weekly production possible	Total production in spindle hours	Efficiency (%)
Sept. 6	4672	144	672,768	459,264	68.26
Sept. 13	5236	144	753,984	680,864	90.30
Sept. 20	7124	144	1,025,856	817,088	79.65
Sept. 27	7124	144	1,025,856	962,336	93.81

You could use some extra cash? Here's how to get it

ENTER one or more kinks, short-cuts, time savers, or quality improvement suggestions in TEXTILE INDUSTRIES Kink Contest which closes August 15. Winner of the contest gets $100, in addition to payment at present space rates for all items accepted for publication.

The contest rules are simple:

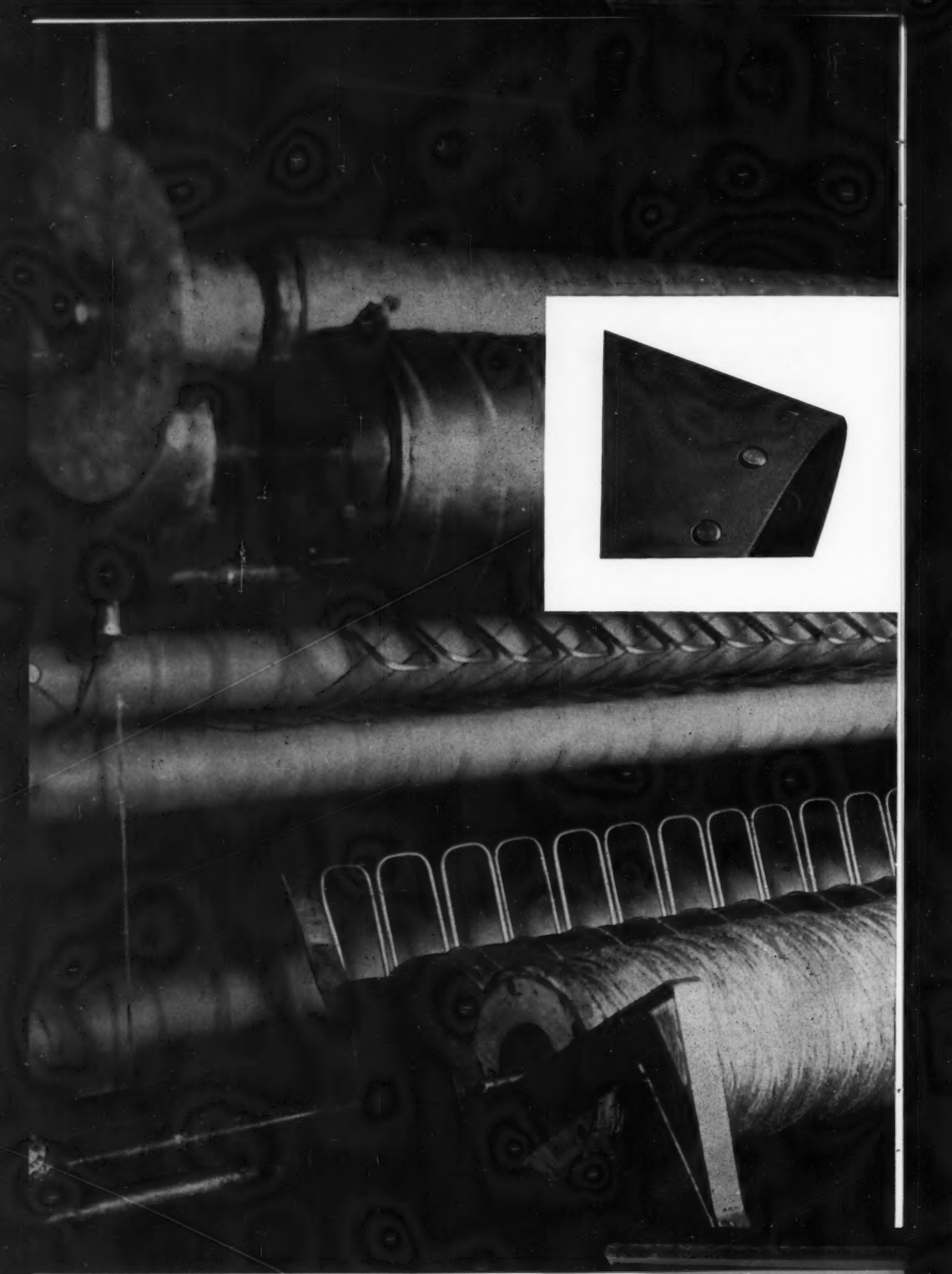
► All contributions must be postmarked not later than midnight, August 15, 1959.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

► Send your contest entry to: **The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.**



Along with a 30% increase in yarn uniformity

Dayco Rub Aprons

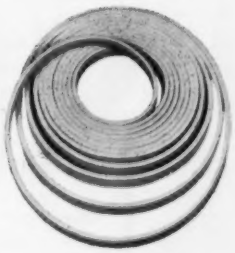
Give you more yarn per card

DOWNTIME'S UNNECESSARY when you use Dayco Rub Aprons. Now you can strip your cards faster . . . because Dayco Rub Aprons require no oiling . . . and save up to $25 an hour. Trouble-free Dayco Rub Aprons practically do away with even routine maintenance . . . which means they virtually pay for themselves in added production.

TOUGH, 2-PLY Dayco Rub Aprons are doubly reinforced with longer wearing, rubber-impregnated fabric. This extra strength construction gives the apron greater flexing stamina and reduces eccentric motion by 33%! Buttons can't help but stay fixed in an apron body as tough as the Dayco 2-ply.

YARN QUALITY IMPROVES as much as 30% because the texture of Dayco Rub Aprons never varies! Having the highest co-efficient of friction available, Dayco Rub Aprons never slick or glaze, are immune to changes in temperature and humidity, and are unaffected by emulsion oils which cause surface growth in other aprons.

NO NEED TO ADJUST trouble-free Dayco Rub Aprons. Perfectly concentric, they hug the rolls tightly for accurate tracking and assure positive, non-slip drive at all times. Longer wearing, they have an extra-deep synthetic surface with built-in resistance to the abrasion that results from constant rubbing.



DAYCO ENDLESS CONDENSER TAPE

Features offering additional savings . . . greater card efficiency:

- No stretch—little need for take-ups
- Less tendency to twist or turn over
- Easy to clean—require less attention
- Unaffected by oil or static
- Will not crack, economical, efficient

Get the facts. Ask about actual cost-savings with Dayco Rub Aprons the next time the Dayco representative calls. Or write the Dayton Rubber Co., Textile Div., 401 S. C. National Bank Building, Greenville, S. C.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

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OVERSEAS PLANT, THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

Victor Mill Starch

A KEESTAR BY-PRODUCT

IF HE'S A
KEEVER MAN
HE'S THE
WEAVER'S FRIEND

There is no substitute for
uniformity and Keever Service

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
118 SOUTH PLEASANTBURG DRIVE
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH COMPANY • GENERAL OFFICES • COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898

total of 144 hours in production.

Column 4 reflects the maximum possible production resulting from a multiplication of the total number of spindles entered in Column 2 by the basis of weekly production in Column 3.

Column 5 indicates the actual total number of spindle-hours run.

Column 6 reflects the efficiency in per cent. This is derived by dividing the total number of spindle hours set up in Column 5 by the maximum production possible as shown in Column 4. In this way the percentage of efficiency can never exceed 100.

The monthly or four-week-period average efficiency used for comparative purposes with other periods is determined by totaling Columns 4 and 5 and then dividing the total of Column 5 by the total of Column 4.

Any downward trend in week-to-week operations as indicated in Column 6 may well be used as a weekly guidepost in checking for production problems.

CONTRIBUTOR No. 1092

Keeps hose in basket

THE EDITORS:

The air hose in our knitting room was usually left lying under the air line to which it was attached. Naturally the coils of hose left strewn about the alley tripped every unwary soul who ventured to use that area. Finally we had a rack installed to permit the coils to be stored out of the way. This required the hose to be lifted and placed on the rack, however, so the hose still stayed under foot much of the time.

The ultimate solution proved a very simple one—we had a bushel basket screwed to the floor near the place where the hose is attached to the air line in an out-of-the-way place. The hose is easily coiled in the basket and is just as easily withdrawn when needed. And for some reason no one can explain, the people who use the hose, and who once failed to return it to the rack, now take pride in returning it to the basket.

CONTRIBUTOR No. 1059

Trick for knitters with damaged cones

THE EDITORS:

Cardboard cones holding knitting yarn become damaged in different ways. The bottom of the cone may be split or bruised without making a big difference in knitting efficiency. But when the top or nose of the cone becomes roughed up yarn can begin to hang on the rough places.

A simple button large enough to cover the end of the cone can be threaded with thin copper wire, the wire twisted to fit closely into the end of the cone, and the assembly placed in the nose of the cone. The button keeps the yarn pressed away from the rough nose and stops that *!XX-* hanging.

CONTRIBUTOR No. 1122

How is loss of warp size measured?

THE EDITORS:

How do you measure the drop in warp sizing during the weaving operation? Suppose we have prepared a set of 14s (cotton) warp and have put 40% size on it at the slasher. The cloth is 36″ wide and is slashed for 40-yd cuts. The warp is 14s, the filling is 12s. The sley is 42; picks per inch, 36. After weaving the cloth and weighing it in the grey state by the ordinary method—subtracting the weight of filling in a piece—the size retention is 28% or a drop of 12 points. Can it be a correct method? If it is not, which is the correct way to determine it?

The warp yarns are finished to retain 40% size, and therefore generally 7 to 10% more size is put on the warp so that after passing through the weaving and calendering processes the warp may retain 40% size on the weight of the warp yarn.

In India most of the mills are manufacturing grey calendered cloth containing 40% size. For bleached, dyed, or mercerized goods, 12% size on warp is sufficient.

Indian cotton mills use maize or corn starch and tamarind kernel (seed) powder, finely ground and processed and prepared up to 100 mesh. For coarse (16s) and medium (17s to 34s) warps, tamarind seed powder and China clay are largely used in size mixings to give weight to the calendered goods. On the sizing machines (slasher tape sizing) there are no proper size controls and arrangements to know the exact size weight put on the warp and the moisture regained by it. The size is put on the warp by feel only. We can judge the approximate size absorbed by it.

We calculate the size retention as follows, but can't say our method is correct. After the warp ends are drawn through the heddles and reed, the warp is mounted on the loom. All the woven pieces of that beam are collected and weighed. The weight of filling of the pieces, according to calculation, is subtracted. This gives the weight of warp plus size retained on it. Then the weight of a dry warp of cut length, taken during sizing, is subtracted and the size weight and the per cent size are calculated. The weight of warp yarn is taken under mill conditions of temperature and humidity.

My size formula is prepared by mixing 250 pounds of China clay in 500 pounds of water (six inches of water in a 4′ x 4′ x 4′ beck) and boiling the clay for six or seven hours. Into this I pour 90 pounds of solid magnesium chloride, 30 pounds of Glauber's salt, and 70 pounds of vegetable tallow (65% fat) and boil for another hour.

In a second beck are mixed 180 pounds of tamarind seed powder,

Which of these 3 products and services can you use from BECCO?

Solve Dye Problems with BECCO Silicate-Free Bleaching

"We dyed half a million yards this week... with no rejects!"

So reports a new user of Becco Silicate-Free Bleaching Process,* who previously suffered up to 25% rejects.

When complex silicates of calcium and magnesium formed scale on equipment and left resistant residues in the cloth, a Becco Sales Engineer studied the situation, and recommended Silicate-Free Hydrogen Peroxide bleaching solutions which eliminated the problem.

Silicate-Free bleaching won't answer every textile bleaching problem. But chances are one Becco process or another will. If you need help, use the coupon below to request a Sales Engineer's call. Also, ask for your free copy of Bulletin No. 71, "Continuous Bleaching of Cottons with Silicate-Free Peroxide Solutions".

*U.S. Patents 2,740,689 and 2,820,690

BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York

Dept. TI-A

Gentlemen:

☐ Please send a free copy of Becco Bulletin No. 71.

☐ Please have a Sales Engineer call.

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Years of experience in textile processing have produced a library of technical information which is available in individual bulletins, free on request. Use the coupon below to let us know which you'd like to receive.

- **No. 29 — Hydrogen Peroxide Dry-In Process for Bleaching Wool.**
- **No. 35 — Modification of Wool with Peroxygen Compounds.**
- **No. 43 — Treatment of Cellulose and Cellulose Derivatives with Peroxygen Compounds.**
- **No. 52 — Bleaching with Some Peroxygen Chemicals.**
- **No. 53 — Fluorescent Agents in Peroxide Bleaching of Knit Goods.**
- **No. 60 — Successful Bleaching of Types 670 and 200 Nylon With Peracetic Acid.**
- **No. 61 — Knit Goods Bleaching Range.**
- **No. 71 — Continuous Bleaching of Cottons with Silicate-Free Peroxide Solutions.**
- **No. 75 — Oxidation of Dyes On Cottons and Synthetics with Peroxygen Chemicals.**
- **No. 88 — Progress in the Art of Bleaching.**

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Please send me a copy of each of the following bulletins:

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Becco's Four-Fold Engineering Service Program—offered free—includes:

1. Comprehensive survey of your facilities.
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Can you use this free Becco help, based on more years of experience with bulk handling of H_2O_2 than any other manufacturer? Use the coupon to let us know.

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Please tell me more about your Four-Fold Engineering Service.

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previously dissolved in cold water for six hours, 833 lb of water (10 inches in the beck), one pound of caustic soda, eight pounds of zinc chloride, and three pounds of a stripping and reducing agent to remove the yellow color imparted by the tamarind powder.

The China clay and the mix from the second beck are boiled together for two hours. At this point five pounds of gum (already dissolved in cold water) are added and boiling continued for another 30 minutes. The finished beck contains 23 inches of mix which is ready for pumping to the slashers.

The relative humidity in the weaving shed is maintained at 75%. We reed the cloth two ends per dent (40 ends per inch here), have a reed spread of 39.50 inches, and run 1600 ends in our warps (20 of these are selvage ends). Our total cut length at the slasher is 43 yards, and this figure shrinks to 39 as the cloth leaves the loom.

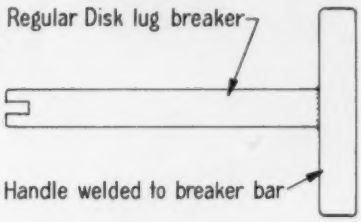
The weight of the actual cut length and the calculated cut length will differ, as the warp beam counts are coarser by 0.25 to 0.50 numbers. After sizing the warp the actual average weight of the cut length is subtracted from the sized cut weight.

CONTRIBUTOR No. 1132

Break disk lugs easily

THE EDITORS:

Eliminating disk lugs from pattern disk on the Banner solid color machines and the wrap and reverse can be done more quickly and easily if a handle for twisting is placed onto the breaker bar.



Disks are often soft and a great deal of upward and downward movements are required to sever the lugs from the ring. However, a twist on the handle and the lugs snap right off, thereby saving lots of time, effort, and blistered hands.

CONTRIBUTOR No. 1135

Extra sleeves protect against grime

THE EDITORS:

Here is a tip for those people who now and then have to insert their arms into the oily parts of the knitting machine, and who wish to keep their arms clean: cut the sleeves from an old garment that is dense enough to stop grease and use the sleeves over the arms at such times. Many fixers could use the idea to save them much time in washing up after doing a particularly dirty repair job. Rubber bands will keep them in place for ordinary use.

CONTRIBUTOR No. 1057

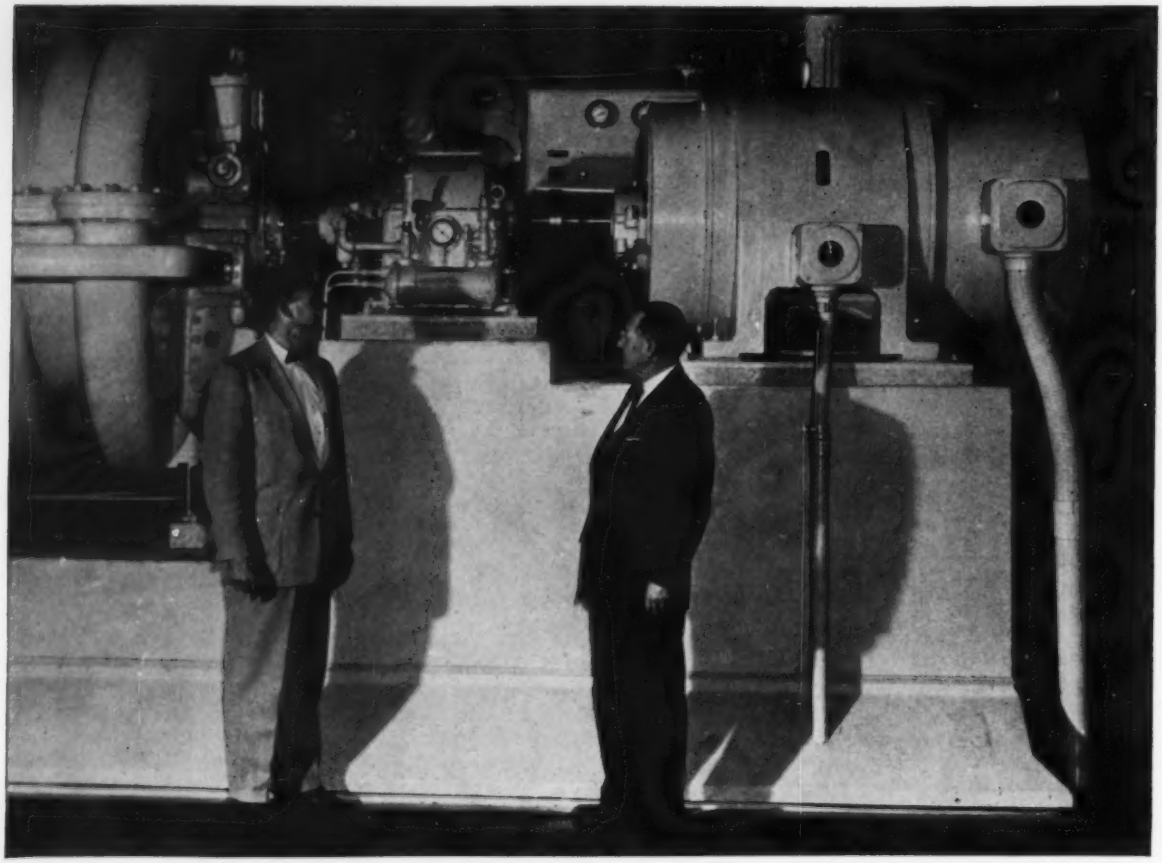
Transparent jackets protect fabric designs

THE EDITORS:

A transparent jacket placed over the pattern sheet of a hosiery design, or any design sheet, will keep the sheet clean and suitable for reuse. Dirty hands handling a design sheet often obscures some of the minute details and therefore causes errors to be made in setting the pattern into the machine.

Placing a transparent jacket over the sheet prevents this soiling, the sheet remaining clean at all times. Should grease and oil get on the transparent jacket, it can be easily wiped off and no damage will be done to the pattern sheet itself. After the pattern has been copied, it can then be removed from the jacket and stored.

CONTRIBUTOR No. 1096



One of two Fairbanks-Morse 4160 volt, 700 hp. slip ring motors which power Carrier refrigeration compressors.

8-speed climate with F-M motors!

Flexible control of new air conditioning system saves power and maintenance for Union Oil Center

Through a new Carrier dual-duct high-velocity system powered by Fairbanks-Morse slip ring motors, the magnificent new Union Oil Center in Los Angeles is ideally air-conditioned at minimum power and maintenance cost.

Providing 8 speeds between 75 and 100 percent of capacity, the two F-M 700 hp. motors make it possible to match operating rpm. of compressors, chillers and condensers to any specific condition. The new Center covers 5 acres, with 1200 employees occupying 426,000 square feet of the office space in a complex of four buildings—an installation requiring the finest in air-conditioning equipment and components.

Fairbanks-Morse offers the distinct advantage of a broad range of alternating and direct current motors, in all types, and in ratings from ½ to 10,000 hp.

For expert assistance in specifying, write Fairbanks, Morse & Co., 600 South Michigan Ave., Chicago 5, Illinois.

New Union Oil Center in Los Angeles.

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Tips on handling cases, cartons, bales, etc., the easy way

THE EDITORS:

The operations of most textile firms involve the handling of large numbers of hampers, cases, etc. In many of the older multi-storey buildings these relatively bulky packages are lifted from one floor to another by external cranes often referred to in Britain as "teagles." The case or package is lifted to the level of the opening on the requisite floor and then caused to swing inside the doorway when the chain or cable lifting it is immediately slackened; thus it deposits the load on the floor to be removed by truck or trolley.

The operation of efficiently transferring packages of this type within a mill is one calling for considerable manual dexterity and judgement. These are factors which may not be dominant in the persons employed on this particular duty. In addition, one is left with a package weighing perhaps 400 lb very near the edge of the opening many feet from ground level.

The elimination of this operation can best be achieved by the installation of internal or external hoists. This may not be practicable, and therefore other means of simplifying the operation and eliminating the possible danger have to be considered.

One solution is to employ a modified type of roller conveyor on each landing where packages are pulled in. The modification consists of fitting a ratchet to each roller so that it can only revolve in the direction which conveys goods into the room. By arranging such a conveyor in line with the crane, and with a 1 in 20 slope inwards, cases can be handled very much quicker and with complete safety. The length of the conveyor is so arranged that a number of cases can be stored on it, thus allowing one man to unload a vehicle with the normal delays which used to occur when each package had to be moved before another one could be brought in.

The conveyor can lead to the storage space, and of course only the initial 10 or 12 rollers require to be ratchet controlled. Alternatively, only a short length need be used with the final height so arranged that the packages are delivered straight on to whatever type of truck is used for moving them.

An additional feature which is helpful where fork lift trucks are used is to arrange two gaps in the roller conveyor coinciding with the forks of a fork lift truck. A suitable buffer stop would ensure that the case is correctly aligned and ready for lifting for transport and stacking. It may be possible to purchase short lengths of roller conveyor equipment with ratchet controls.* Ours were produced on the premises using standard bicycle freewheel mechanisms as the ratchets. These have withstood prolonged and severe service with complete satisfaction.

CONTRIBUTOR No. 1113
(*England*)

*It is.—The Editors

Operating valves in cramped places

THE EDITORS:

At one time our plant rest rooms were equipped with urinal basins of the automatic type that flush at regular intervals. These required a great measure of servicing, so we removed them and installed manual ones.

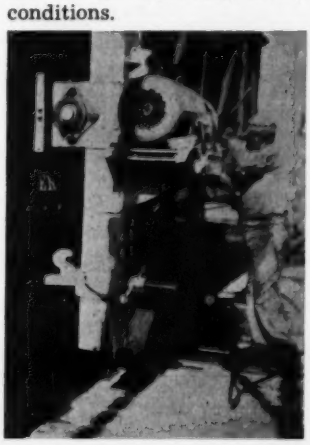
We were cramped for space, so we installed the new units close to the wall and found that there was not ample room to operate the valves comfortably. As the valve had only to be turned one-half turn, we welded a short length of ½" rod to the shut-off valve (see

Coal car shaker saves labor

The coal car shaker shown at North Carolina Finishing Company saves the labor of one man and eliminates the safety hazard formerly associated with unloading coal cars. The car shaker cost was about $2500, and it serves to unload two cars of coal in slightly over four hours.

Formerly, the coal was unloaded by hand labor on a coal chute. The men used long bars and coal shovels to push the coal loose from the side of the car, and each man worked about five or six hours unloading one car of coal, constantly faced with the danger of sudden slides.

Coal handled by the North Carolina Finishing Company amounts to about 125 tons a day or about two and one-quarter cars a day. The car shaker represents a considerable time and labor saving as well as improving safety conditions.



HARSHAW ZINC NITRATE FLAKE

Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

Harshaw Zinc Nitrate Flake is produced under rigid control assuring the user of uniform resin catalysis at all times.

Harshaw Zinc Nitrate Flake measures about 3/32" thick by ½" long, thereby reducing dust and fines to absolute minumum.

Packed in 300 or 100 pound Leverpak drums with polyethylene liner, Harshaw Zinc Nitrate Flake is available for immediate shipment. Write for samples and prices.

TYPICAL AVERAGE ANALYSIS:

Assay as $Zn(NO_3)_2$	72.5%
Zn	24.6%
Fe	0.001%
Pb	0.003%
pH of 5% solution	5.2
Insol. in 1% Nitric Acid Solution	0.001%

THE HARSHAW CHEMICAL CO.
1945 E. 97th Street, Cleveland 6, Ohio

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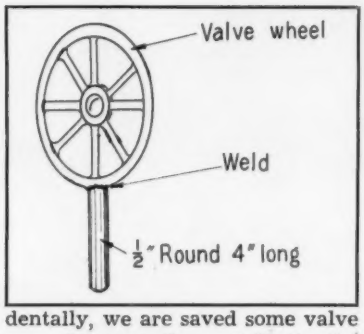
For further information use Handy Return Card, Page 187

the illustration). The valves are now opened adequately by moving the rod from bottom to top position.

I grant you we could have put elbows on the piping and made the adaptation unnecessary. But changing the piping would have been more expensive and would have used some of our space.

A similar arrangement can be used where space is at a premium and valves do not require complete opening and closing. We set the rod to the valve wheel to leave a quarter-inch space between the rod and the wall when the valve is closed snugly. Incidentally, we are saved some valve wear because the rod limits the valve action and prevents the washer from being jammed very forcibly against the seat.



CONTRIBUTOR No. 1126

Simple means of maintaining credit memos

THE EDITORS:

In one large textile firm the design and use of a new form, called "Record of Credit—Memoranda," simplified recording and maintaining controls of credit memos. This form (see illustration) is simple and self-explanatory.

The use of this form as a register reduces the number of entries on the general ledgers and facilitates accuracy of recording. By its use it is no longer necessary to prepare an extra copy of the credit memorandom itself for the bookkeeping department control section.

The entries originate in the billing department at the time the credit memo is prepared. The entries are posted in numerical order and the form permits listing and reporting of 70 entries on a single page. A new sheet is used following the entry of the last credit memo for any given month. However, the credit memo number series is continued until the close of the year when the series begins over again with number one.

The form is added daily, subtotaled, repeated weekly, subtotaled, and totaled for the month. The first letter of the name of the mill is prefixed to the credit memo number, and since each mill originates its own credit memos, the control for the general ledgers is simplified by reports submitted by each mill. Where billing and credit memo are completed or issued at one central location it may be advisable to prepare separate "Records of Credit—Memoranda" to facilitate accuracy of total recording by each mill.

CONTRIBUTOR No. 1049

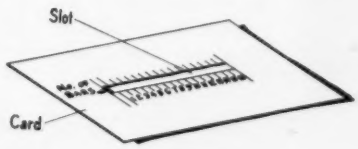
RECORD OF CREDIT - MEMORANDA

Cr. Memo Number	Date Issued	NAME	Amount	Cr. Memo Number	Date Issued	NAME	Amount
		Total Brot. Fwd:				Total Brot. Fwd:	
		Total Forwarded:				Total Forwarded:	

Speeds design copying

THE EDITORS:

The slotted card pictured here is an eye and time saver for designers to use in copying chain drafts. The slot is placed over the line being copied to bring only that line into view. It does not detract from the portion being copied, and by blocking all other "X" marks from view it prevents many errors.

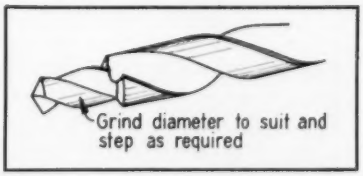


CONTRIBUTOR No. 1123

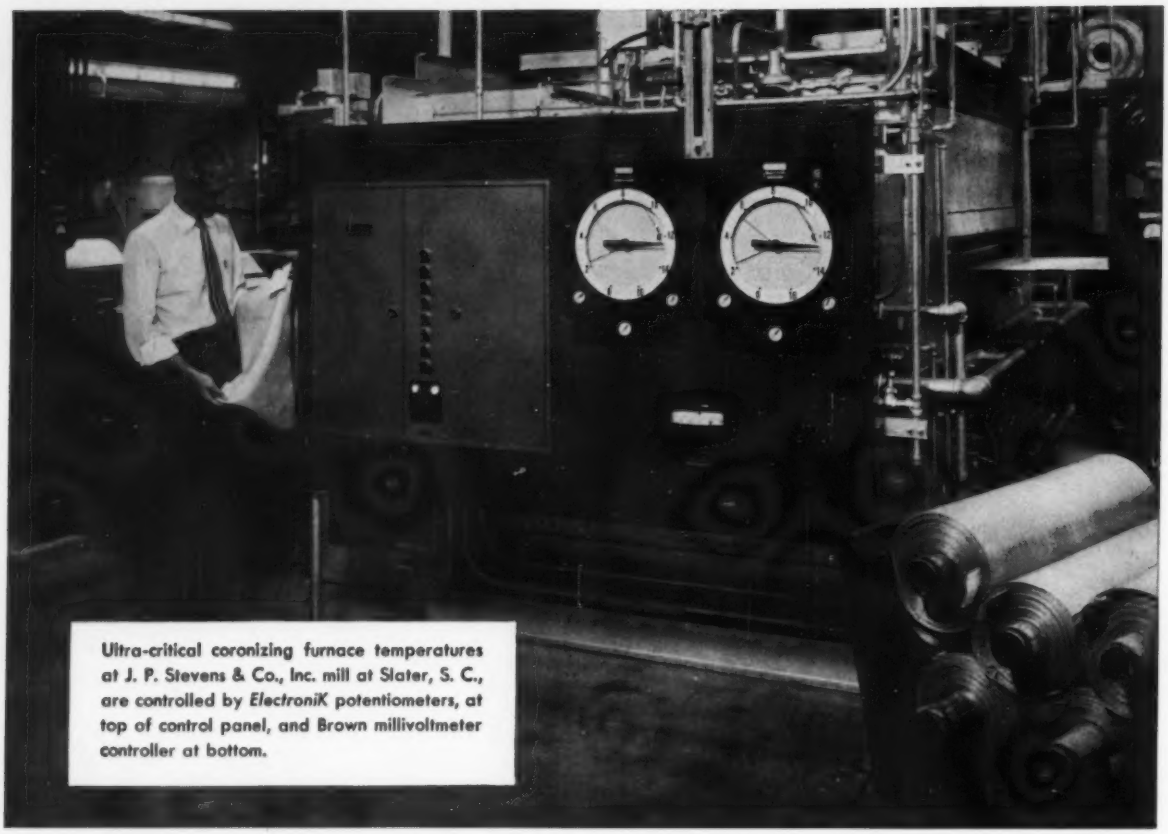
Make countersink drill

THE EDITORS:

Sometimes in drilling machine parts it is necessary to prepare a hole of different diameters. This can be done by starting with a small hole and enlarging it to the depths needed. Such holes can be drilled quickly to the correct depth by this method. Start with a drill large enough for the greater bore and grind the drill to smaller diameters for the smaller portions of the hole. Then drill in one pass.



CONTRIBUTOR No. 1105



Ultra-critical coronizing furnace temperatures at J. P. Stevens & Co., Inc. mill at Slater, S. C., are controlled by *ElectroniK* potentiometers, at top of control panel, and Brown millivoltmeter controller at bottom.

Ultra-Critical Coronizing Temperatures Controlled by *ElectroniK* Instruments at J. P. Stevens & Co., Inc.

Coronizing gives textile manufacturers new opportunities to create fabrics that combine the fire resistance, shrink resistance and washability of glass fibres with distinctive beauty, excellent color retention and good hand and drape. Carefully controlled coronizing completely removes preweave sizing, prepares the cloth for dyeing, permanently sets the weave, and produces a soft fabric and a limp, crimped fibre.

Temperature in the coronizing furnace is ultra-critical. If too high, the fabric weakens or melts. If too low, dyeing is difficult and uneven. That's why J. P. Stevens & Co., Inc. depends on Honeywell controls to assure top-quality fabric and consistent, reproducible dyeing.

Controlling the coronizing of these new glass fabrics is but one way Honeywell serves the expanding needs of the textile industry. When you plan a new process or one to increase efficiency and reduce costs . . . you can profit from their complete line of instrumentation and specialized textile experience. You'll get valuable aid in matching instruments to equipment plus dependable, accurate control of temperatures, pressures, flows, regain and other variables. There's a Honeywell office near you—a call will bring you full information.

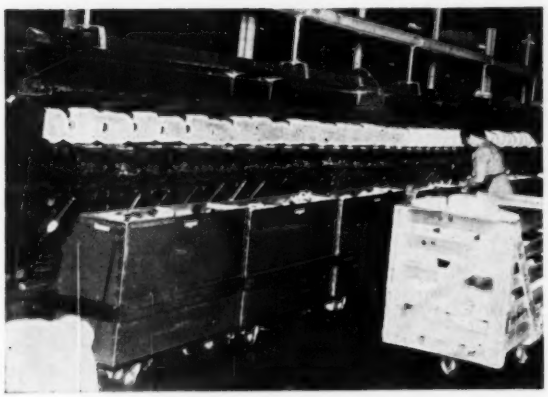
MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

First in Control

NEW PRODUCT PARADE

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Doff boxes double as winder storage troughs

Rehandling of yarn at winding machines is eliminated when a specially designed spinning frame doff box is utilized. Also, the system eliminates the safety hazard created by the necessity for an operative to lift conventional doff boxes to dump yarn into storage troughs mounted above the winding units.

As shown in the accompanying photo, the shape of the doff box conforms to that of the winder so that when the box is in position at the machine it does not inconvenience the operator. A floating bottom is provided in the box to keep the yarn near the top and prevent the operator having to reach an unnecessarily long way for yarn; thus, operator fatigue is less.

An empty bobbin box attaches to the doff box for use by doffers.

Fisher Mfg. Co., Hartwell, Ga.

Do you want more data? Write ◂ or use card on page 187; list F-101

Ring permits traveler speeds up to 8000 fpm

A new and improved spinning ring, called the "Kryton," provides satisfactory use of traveler speeds in the range of 7,000 to 8,000 fpm.

Characterized by a different shape than that used on conventional rings, the ring also has a new finish.

Use of correct breaking-in procedure provides maximum wear life for the ring and reduces the number of ends down in spinning. With the recommended procedure, the ring can be broken in within 120 hours and in most instances in a much shorter period of time.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◂ or use card on page 187; list F-102

Knotter ties yarns that weaver's knotter won't

The Boyce Fisherman's Knotter ties a fisherman's knot in synthetic yarns (both filament and spun) and in woolen and worsted yarns and blends.

The knotter, five models of which are available, is held in the left hand. The two ends to be tied together are placed in the machine and the trigger pulled and released, tying the knot and clipping the ends.

Mill Devices Co. Div., A. B. Carter, Inc., 226 Linwood St., Gastonia, N. C.

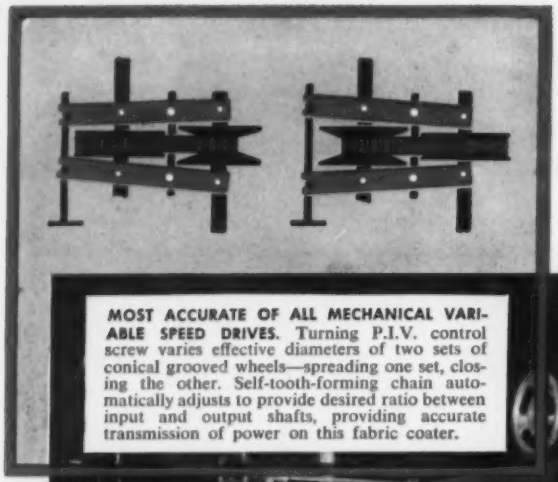
Do you want more data? Write ◂ or use card on page 187; list F-103

Lets tensile testers run unattended

Completely automatic testing of yarns and cords in the tensile range up to 50 lb is provided by the "Scotamatic" apparatus.

The unit operates unattended—once the operator has introduced a sample of yarn or cord, the machine takes

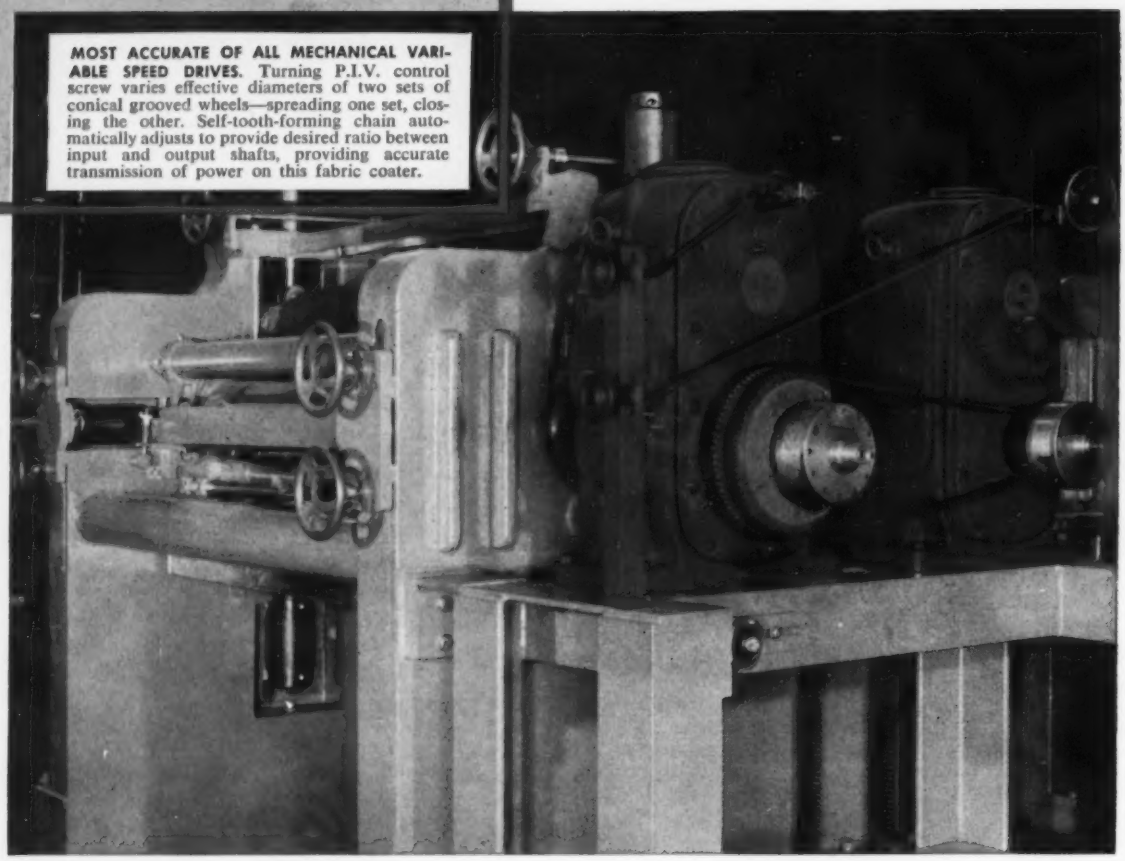
Here the "Scotamatic" apparatus is operating in conjunction with the Scott IP-4 incline plane tester making continuous, unattended tests of bobbins of tire cord.



In principle . . .

in performance . . .

MOST ACCURATE OF ALL MECHANICAL VARIABLE SPEED DRIVES. Turning P.I.V. control screw varies effective diameters of two sets of conical grooved wheels—spreading one set, closing the other. Self-tooth-forming chain automatically adjusts to provide desired ratio between input and output shafts, providing accurate transmission of power on this fabric coater.



for positive, infinitely variable speed control

. . . there's nothing like P.I.V.

Here's a variable speed drive that is truly unique. Unlike conventional designs, Link-Belt P.I.V. with its all-metal chain drive is *not dependent on friction* for transmitting power.

P.I.V. permits fast, easy speed changing too. You can select any speed in its range—find it instantly, hold it indefinitely. No bother stopping the drive.

Because Link-Belt P.I.V. (Positive, Infinitely Variable) drives are fully enclosed, atmospheric conditions can't affect their efficiency. They're made in 8 sizes, 16 standard types. Ask your nearest Link-Belt office or authorized stock-carrying distributor for Book 2274.

P.I.V. LINK-BELT VARIABLE SPEED DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs. Representatives Throughout the World. 14,042

over, testing and recording throughout an entire bobbin or group of samples length after length, without any attention.

Recording and evaluation of test results are in three values: (1) stretch at a predetermined point of load; (2) ultimate tensile strength; (3) ultimate elongation. The tabulator summarizes the individual values at the completion of each 10 tests. Each value for each test is recorded individually as well as totaled for the 10.

Scott Testers, Inc., 60 Blackstone St., Providence, R. I.

Do you want more data? Write or use card on page 187; list F-104

Eliminates hand trimming of seamless hose

Now available for present and new Scott & Williams Model KN seamless hosiery knitting machines is a yarn cutting device that trims yarn ends short enough so that they cannot be accidentally caught by the needles or lie inside the fabric to present an unsightly appearance when the stocking is worn.

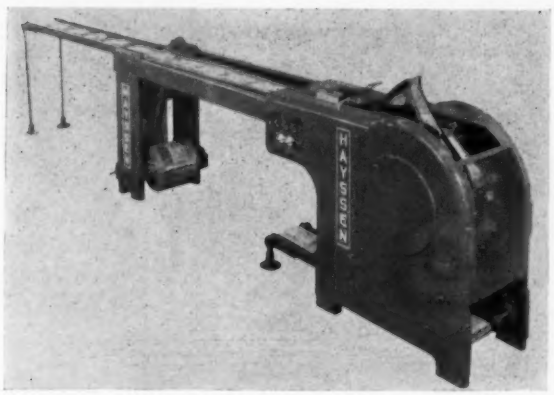
Designated the "Multi-Blade Yarn Trimmer," it eliminates tedious hand trimming operations and is simple, sturdy, and easily maintained.

The trimming operation is accomplished by permitting the yarns to enter a notch in the outside transfer cam where they are instantly severed by one of the passing conventional dial fins.

Scott & Williams, Inc., Laconia, N. H.

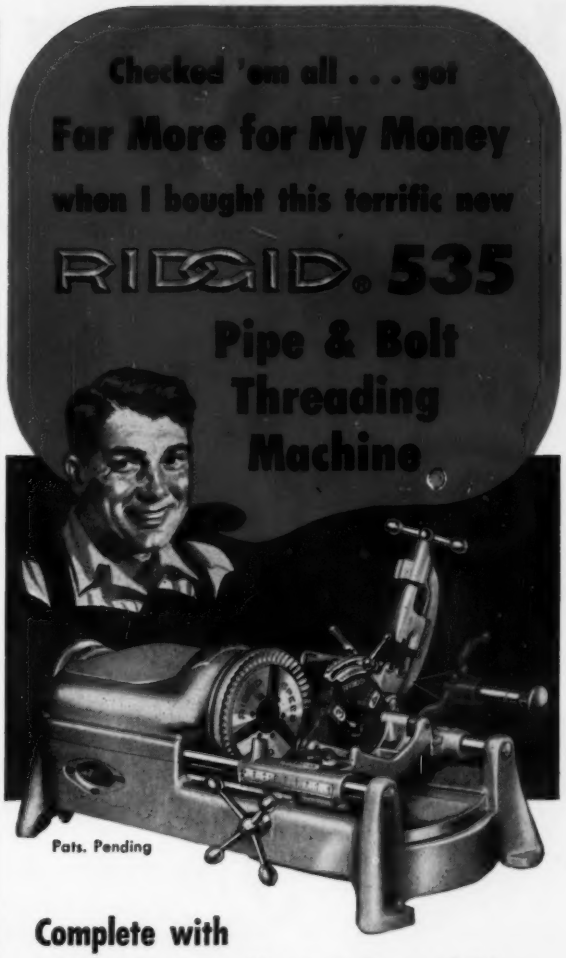
Do you want more data? Write or use card on page 187; list F-105

Packages goods that are normally hand wrapped



The RT Packaging Machine provides automatic packaging of non-uniform textile products that are regularly hand wrapped or machine wrapped with support. A new method of forming the package independent of the item being wrapped permits the use of the machine for products of various sizes. Any heat sealing material may be used at speeds up to 100 packages a minute.

As the material is pulled toward the back sealer, the film is naturally folded over the product. It passes under a back sealing iron. Height of package is adjusted with a finger wheel that raises or lowers the back sealing bars. After completing the back sealing operation, the product moves on to the end sealing bars which are positioned on a constantly rotating drum. The jaws seal the bottom of the first package and top of the second package in one operation. The package is held in the sealing jaws and follows the drum to the discharge conveyor where it is released. The product never comes in contact with ma-



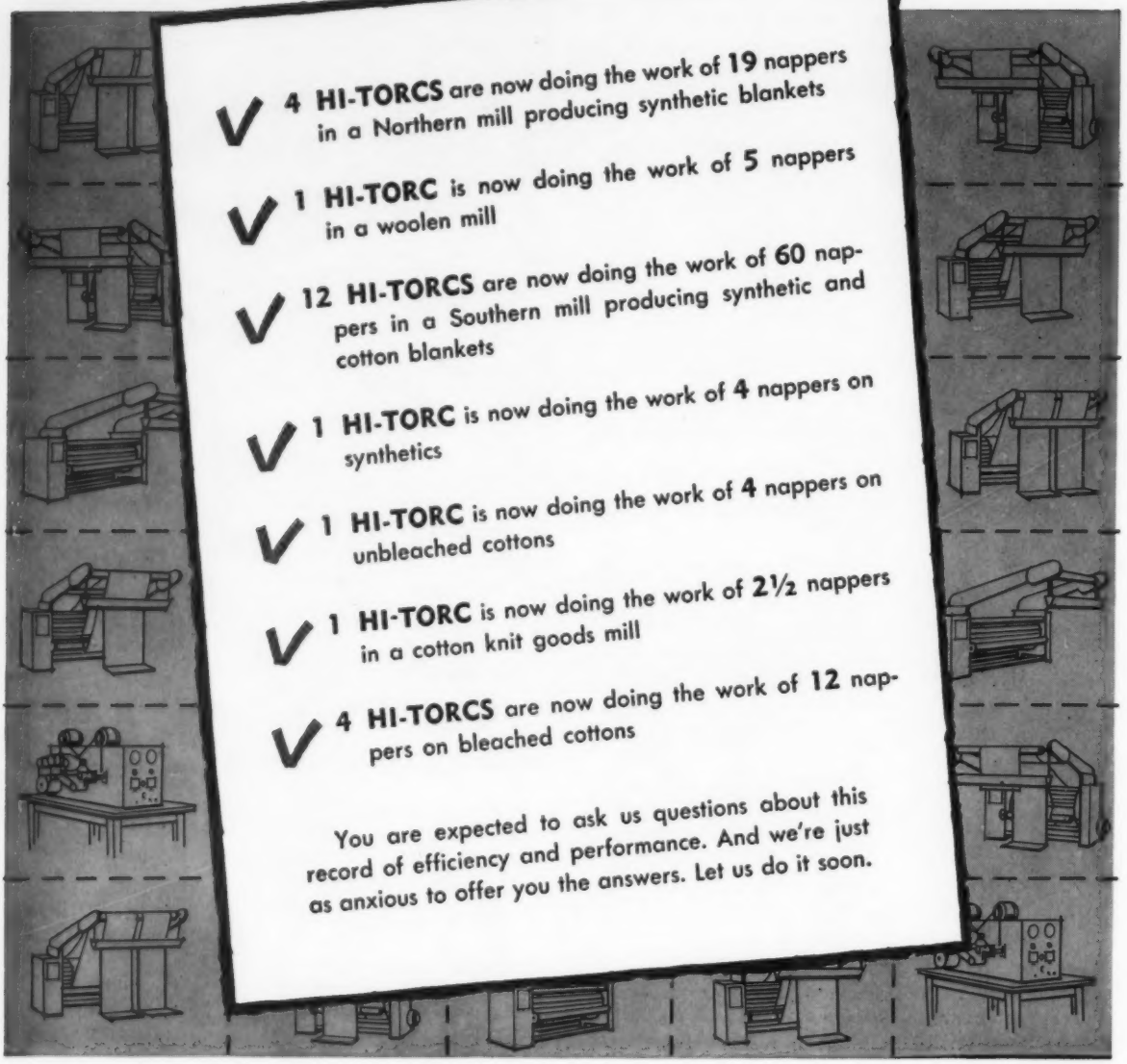
Complete with
1 Universal Die Head, 2 Sets of Dies for ½" to 2" pipe or conduit

Looks good, does better. Perfect cutting, reaming, threading fast . . . and easy! Three tools operate independently . . . swing up out of the way for short pipe chucking from front. Slip-proof Speed Chuck is a great performer. Concealed oil system, automatic shut-off nozzle. Quick-opening die head sets to size right in machine. Power?. . . RIDGID-built motor handles 2" pipe, conduit, bolt, rod—and 12" geared tools easily. Try it, compare it . . . and you'll understand its enormous popularity! Leg and wheel stands available. At your Supply House.

The Ridge Tool Company — Elyria, Ohio, U.S.A.

THREADED PIPE... It's Tight... It's Best... Costs Less!

You should know these facts about GESSNER HI-TORC NAPPERS



- ✓ **4 HI-TORCS** are now doing the work of **19** nappers in a Northern mill producing synthetic blankets
- ✓ **1 HI-TORC** is now doing the work of **5** nappers in a woolen mill
- ✓ **12 HI-TORCS** are now doing the work of **60** nappers in a Southern mill producing synthetic and cotton blankets
- ✓ **1 HI-TORC** is now doing the work of **4** nappers on synthetics
- ✓ **1 HI-TORC** is now doing the work of **4** nappers on unbleached cottons
- ✓ **1 HI-TORC** is now doing the work of **2½** nappers in a cotton knit goods mill
- ✓ **4 HI-TORCS** are now doing the work of **12** nappers on bleached cottons

You are expected to ask us questions about this record of efficiency and performance. And we're just as anxious to offer you the answers. Let us do it soon.

DAVID GESSNER CO.

WORCESTER, MASS.

Southern Representative: Richard L. Bernard, 222 Piedmont Bldg., Greensboro, N. C.
Western Representative: E. G. Paules & Co., 1762 West Vernon Ave., Los Angeles, California
Canadian Representative: W. J Westaway, Montreal, Quebec; Hamilton, Ontario

chine parts, so the machine may be used for wrapping very delicate fabrics.

Two types of sealing heads are available. Resistance type heaters are used for regular heat sealing material, while an impulse sealing method is used for unsupported polyethylene and other plastic material.

Hayssen Mfg. Co., Sheboygan, Wis.

Do you want more data? Write ◂ or use card on page 187; list F-106

Troubled with static electricity? Here's help

With the Simco Electrostatic Locator, Type E, it is easy to locate and determine the relative intensity of electrostatic charges that are interfering with the processing of textiles. With this information, proper location of corrective equipment may be determined. The portable instrument also is useful for periodically checking the effectiveness of static eliminating apparatus.

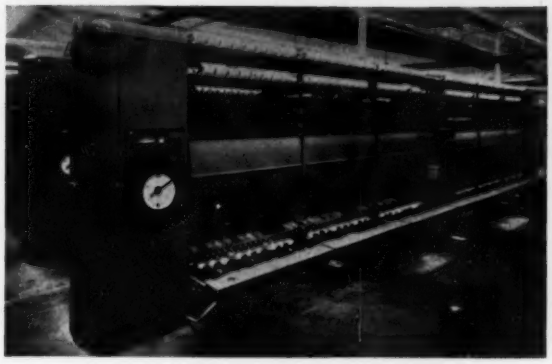
No previous experience is needed for interpretation of readings obtained with the battery-operated, three-pound device. By merely pointing the probe of the meter toward the charged object, the meter is read. Three sensitivity ranges of the meter are available by adjustment of apertures built into the probe.

The instrument is an improved version of the Electrostatic Locator developed by the Institute of Textile Technology and formerly manufactured by Specialties, Inc., of Syosset, L. I., N. Y. Service on these older models is also provided by Simco.

The Simco Co., 920 Walnut St., Lansdale, Pa.

Do you want more data? Write ◂ or use card on page 187; list F-107

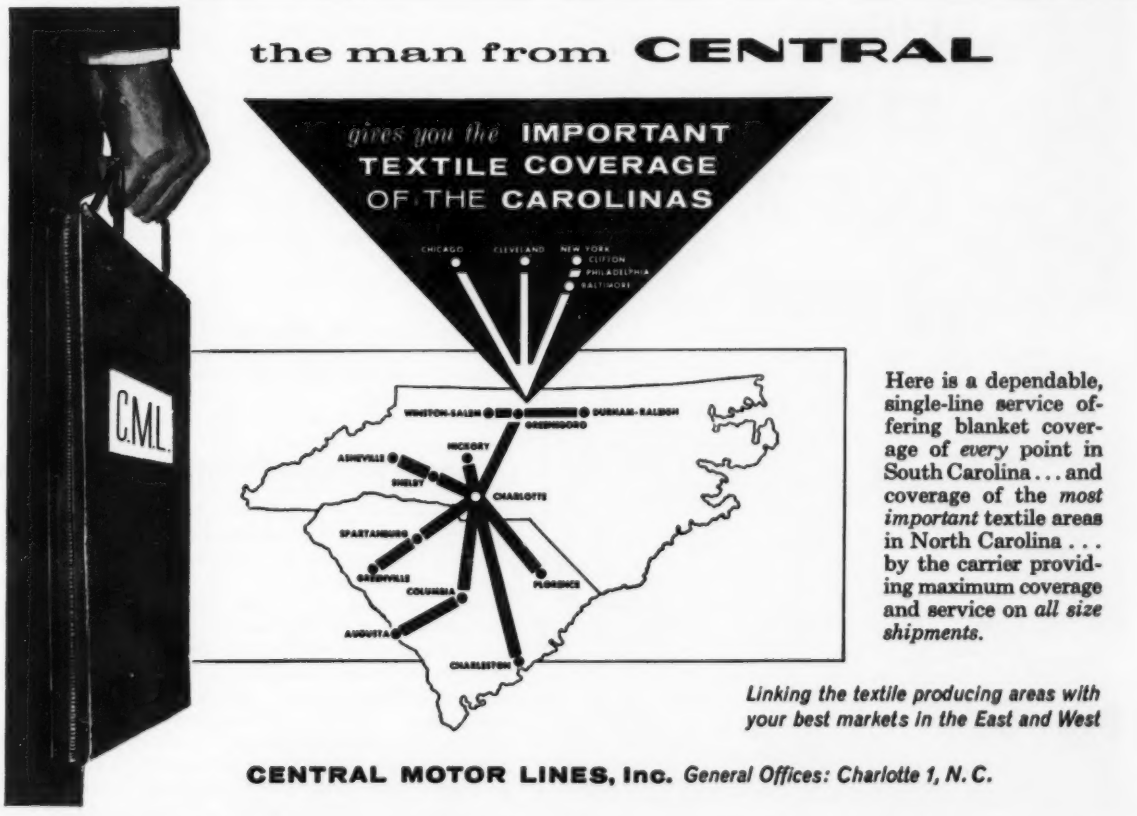
Machine makes high-quality textured yarn



With a false-twist machine recently made available torque-type textured filament yarn characterized by a high degree of uniformity and excellent quality may be produced and wound on headless or alternate type packages with precise tension control.

False twist is inserted in the filaments which are heat-set while in the crimped condition before the release of the false twist.

Equipped with extra long contact heater tubes with individual thermal control for each tube, the twister provides maximum temperature uniformity control. Positive control of shrinkage in the false twist zone is se-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gives you the IMPORTANT TEXTILE COVERAGE OF THE CAROLINAS
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Here is a dependable, single-line service offering blanket coverage of every point in South Carolina . . . and coverage of the most important textile areas in North Carolina . . . by the carrier providing maximum coverage and service on all size shipments.
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Residual Chlorine

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LIQUID SULFUR DIOXIDE

SO_2 accomplishes the following —Acidifies alkaline hypochlorite making it easier to wash out. Reduces chlorine to the harmless valence minus one (Cl^{-1})! Leaves fabric acid free. Tennessee's Liquid Sulfur Dioxide is also very effective as a reducing, bleaching and neutralizing agent, and pH control.

LIQUID SULFUR-DIOXIDE HIGHEST QUALITY SO_2

Available In:

- CYLINDERS
- TANK TRUCKS
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We would like to consult with you on the possibilities of Tennessee's Liquid Sulfur Dioxide in your processing

TENNESSEE TC CORPORATION

617-29 Grant Building, Atlanta, Georgia

cured by positive yarn feed to and removal from heating and twisting elements. Yarn slippage is eliminated through the use of rubber aprons for holding the yarn in contact with the feed rolls.

A French throwster developed the machine and has granted Deering Milliken Research Corp. the exclusive right to license users of the process in the United States, Canada, and Mexico. Exclusive rights to manufacture and sell the machine in these countries have been granted Whitin Machine Works by the throwster and the French machinery builder, Ateliers Roannais de Constructions Textiles, who has made the machine for several years.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◂ or use card on page 187; list F-108

Cloth, carpets won't slip with this paper tube

A new latex-coated paper tube is especially designed to keep cloth or carpet from slipping on the core. More even rolls of cloth with less distortion of weave are produced when the "Star-Grip" spiral and convolute tubes are used.

Available with latex applied in spiral bands, random spots, strips, or solid, these tubes eliminate the need for tape, staples, or aprons, and a tighter roll of goods for storage or shipping is provided.

Star Paper Tube Co., Inc., Rock Hill, S. C.

Do you want more data? Write ◂ or use card on page 187; list F-109

Card flats run 20,000 hours without grinding

Less grinding, less machine downtime, fewer flat strips, and a cleaner web with lower nep count are advantages to be derived from "Rigida" flats which are manufactured by the Swedish firm, AB Kardbeslag, and are available through a U. S. agent.

The short, strong spring steel wire has oval-shaped teeth and is precision side-ground and polished. Duropan hardened points, interval setting, and a green plastic foundation which is easy to keep clean are other construction features.

Oliver D. Landis, Inc., 1805 W. Franklin Ave., Gastonia, N. C.

Do you want more data? Write ◂ or use card on page 187; list F-110

Sizes up weaving efficiency, abrasion resistance

First-perfected products in a new family of non-congealing, starch-derived acetate gums are being marketed under the brand names "Miralloid" and "Mira-Film."

Miralloid acetate gum is particularly suited for warp sizing of combed cotton and worsted type yarns. It has increased weaving efficiency 1.5 per cent on fine combed cotton yarns and from 1 to 3 per cent on worsted and worsted-synthetic fiber blends in extended test comparisons with such previous sizings as potato starch and starch-acrylic emulsion combinations.

Other qualities noted for Miralloid gum are quick cooking, stable viscosity on cooling, aging and reheating, reduced set-back, good response to various homogenizer

pressures, resistance to viscosity breakdown, reduced scum formation, higher slasher speeds, and good cooking-kettle drainage.

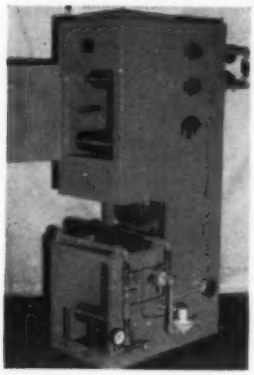
A complete series of Mira-Film acetate gums ranging from high to very low viscosity is an effective and economical warp size for spun synthetic yarns—1 to 2 per cent higher weaving efficiency, greater film strength and abrasion resistance, and low gelatinization temperature.

Both of these gums are made by the acetylation of corn starches. Although the degree of acetylation of each product is not great, properties of the resulting products differ greatly from the original starches.

A. E. Staley Mfg. Co., Decatur 60, Ill.

Do you want more data? Write ◆ or use card on page 187; list F-111

Singer for narrow fabrics or lab use



A new two-burner vertical singeing machine is particularly well adapted either for production service on narrow fabrics or evaluation work in the laboratory.

It is a compact unit designed for table top mounting and is fully equipped with lead-in guide bars, ball-bearing guide rolls, two open-flame ribbon burners, complete gas mixing and ignition equipment, a pair of ball-bearing spark extinguishing rolls, a pair of driven ash brushes, a pair of driven rubber-covered rolls, and a built-in ¾ hp motor drive.

Called the "Minisinger," the unit is fully wired and piped, requiring only connections to electricity, gas, compressed air (a blower is not required), and an exhaust duct.

It is also available with radiant or compression burners in either two- or four-burner vertical or horizontal layout.

Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

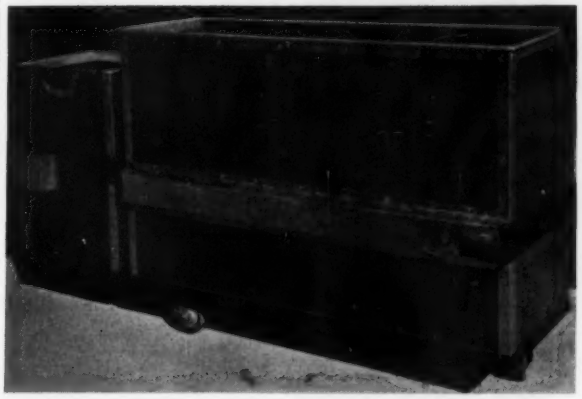
Do you want more data? Write ◆ or use card on page 187; list F-112

Accurately measures thickness of moving fabrics

A continuous, non-contact thickness gauge recently placed on the market uses a low-pressure air stream to measure the thickness of tufted, woven, and non-woven fabrics. In addition to the non-contact feature, accuracy of plus or minus 0.0005" at any thickness, high response, and low maintenance cost are advantages of the apparatus.

The material to be measured passes over a reference point of fixed height, such as an idler roller. Air from a proximity nozzle is directed at the material from above as it passes the reference point. The back pressure in the proximity nozzle is proportional to the distance of the nozzle from the surface of the material.

The pressure in the nozzle is applied to the diaphragm of a jet pipe hydraulic controller. The controller operates a double-acting hydraulic cylinder coupled to the arm supporting the proximity nozzle. Changes in the back pressure in the nozzle result in movement of the nozzle by the cylinder. The nozzle is thereby maintained at a constant distance from the surface of the material whose



Combination Doffing and storage trucks . . .

IN USE ON BARBER-COLMAN SPOOLERS, FOSTER WINDERS, ROTO-CONERS AND LIKE EQUIPMENT.

These specially engineered Fisher Boxes feature a lock-down bottom which permits doffers to load bobbins in the regular manner by simply moving the lever to the locked position and then pressing down the bottom until the locking device engages.

After the empty bobbin container is removed, the lock-down bottom may be released, raising the empty bobbins to a more convenient level for operators of spoolers and like equipment. 16 mills have 4300 boxes in service or on order.

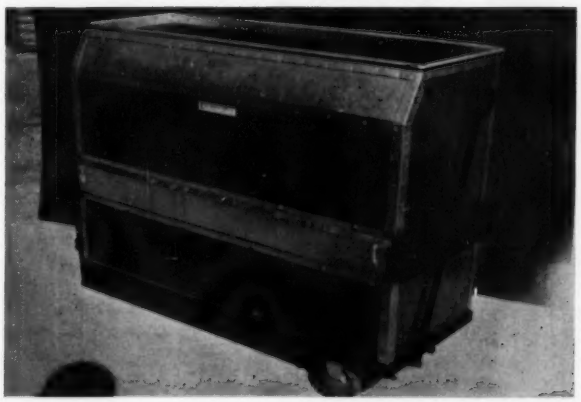
Other top-notch features include a special wheel arrangement, the detachable empty bobbin container, rub guards and sloping sides. All mentioned developments have patents pending.

Contact Fisher when you have materials handling problems. We supply *ideas* along with our boxes.

FISHER

MANUFACTURING COMPANY

BOX 350, HARTWELL, GA.



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...reduce maintenance costs,
with DEUBLIN ROTATING UNIONS

¾" Size Union Illustrated

for water, steam and air service!
Here is a compact, efficient rotating union—

★ LEAKPROOF
★ CORROSION PROOF
★ EASY TO SERVICE
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★ MINIMUM TORQUE makes it ideal for high speed applications

See how this dependable, new rotating joint can reduce inventory of replacement parts because of Deublin's standardization of sizes. Keep "shut downs" from wrecking your production schedules. Pays for itself many times over.

Write today for full details and prices.

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CUT PRODUCTION COSTS!
Two dependable conveyor systems
New Catalog CD-B
AMERICAN Conveyors
AMERICAN CABLE-WAY for loads up to 250 lbs. per hanger
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For free copy write to—
CONVEYOR DIVISION
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TIPP CITY 24, OHIO
Backed by 33 years of experience in materials handling

thickness is being measured. The amount of movement necessary to accomplish this is equal to the thickness change.

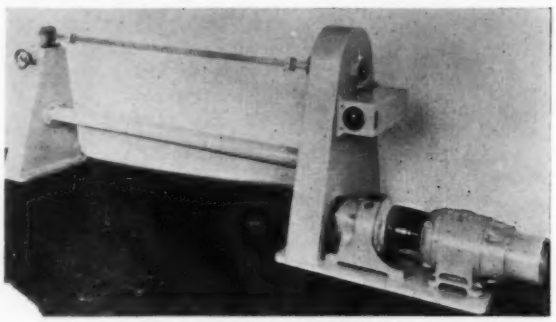
The changes in nozzle position are measured by an electrical motion transmitter. The transmitter signal, proportional to material thickness, may be read on an expanded scale servo voltmeter, or may be recorded with conventional recorders.

The nozzle can be retracted from its normal position (approximately .025" from the material) to 1½" (standard), or more, in order to facilitate threading or other machine operations.

GPE Controls, Inc., 240 East Ontario St., Chicago 11, Ill.

Do you want more data? Write ◂ or use card on page 187; list F-113

Wind-up and let-off units save labor, downtime



The Perkins wind-up package unit.

Now available is a wind-up package unit with a totally-enclosed drive that eliminates adjusting during winding The operative simply sets the desired tension on the dial and automatic control is provided by an a-c torque motor.

Outstanding feature of a new let-off package unit is that tension is easily adjustable through an air brake controlled by a small valve. Tension is proportional to the amount of air pressure applied, which can be read on the gauge which is located near the valve.

Both of these machines have the following construction features: (1) reel shaft runs in antifriction bearings; (2) provision for in and out and lateral adjustment of reel shaft; (3) heavy steel box-type frames; (4) easy installation.

B. F. Perkins & Son, Inc., Holyoke, Mass.

Do you want more data? Write ◂ or use card on page 187; list F-114

Plastic bearings that need no oil made to order

A new bearing material—an alloy of plastics—provides the following: high load carrying capacity; low coefficient of friction and excellent heat dissipation; wide ambient temperature range (— 250 F to + 375 F); low thermal expansion; low water absorption; good resistance to corrosion and abrasion; excellent wear properties in a broad range of speeds and loads; and continued operation without additional lubrication. Called Arguto-MP, the material may be molded to any shape, machined to close tolerances, and will not cold flow or melt.

Among textile mill applications in which bearings made of the material have been tested are the following: (1) After seven months of use in a hosiery dyeing and drying machine bearings were tight in housing and showed no wear; (2) A vane type, 1750 rpm pump, handling

potassium chloride, potassium sulfate, sodium chloride, sodium sulfate, ammonium chloride, and ammonium sulfate at 200 F, ran 11 months without lubrication.

Arguto Oilless Bearing Co., 149 Berkley St., Philadelphia 44, Pa.

Do you want more data? Write ◂ or use card on page 187; list F-115

Make spools of roving bobbins; up capacity 35%

Cotton mill roving bobbins may be modified to provide an increase in capacity of about 35 per cent, with corresponding savings in labor as a result of the longer roving frame doffing and spinning frame creeling intervals. Called "Spobbins" (since they are a cross between spools and bobbins), the modified roving bobbins may be used with either umbrella type hangers or skewers, as desired. They are simple, light in weight, and withstand rough handling.

Spobbins are made from a mill's own roving bobbins by (1) sliding a fiber spool head over the barrel and down against the base of the bobbin, (2) sliding a paper tube over the bobbin down against the base head and gluing it into place, and (3) mounting a second fiber spool head on the top of the bobbin with screws holding the whole assembly together.

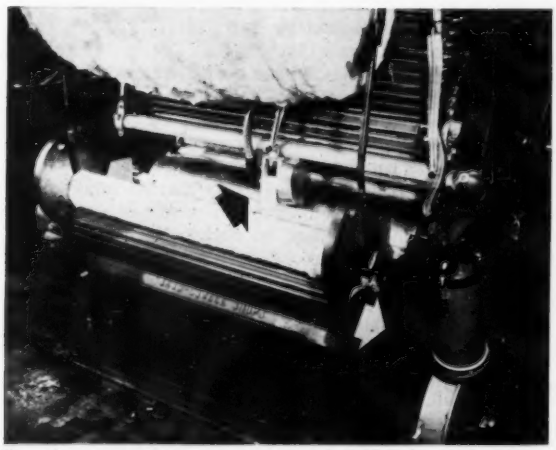
With the builder cam removed from a roving frame and the paddles taken off the flyer arms, the resultant roving build is parallel rather than the conventional double-end bottle.

For heavy yarn mills where pulling the roving over the top of the bobbin is desirable, a smaller fiber spool head is furnished on the top of the bobbin.

Akron Spool & Mfg. Co., 410 Progress St., High Point, N. C.

Do you want more data? Write ◂ or use card on page 187; list F-116

Vacuum attachment for cards saves labor, fiber



The white arrow in the lower right portion of the photo points to the vacuum generator; the black arrow (center) to the fiber collector.

The stripping interval on cotton cards may be lengthened to as much as 120 hours by equipping each machine with a self-contained attachment that (1) removes by vacuum the spinnable fiber from the top of the cylinder wire, (2) condenses this fiber into sliver, and (3) reintroduces it evenly to the card feed roll.

In addition to the saving in labor resulting from the

EXCLUSIVE U. S. SELLING AGENTS
WATSON & DESMOND
P. O. BOX 1954 CHARLOTTE, N. C.

Put your capital to work...

FULL TIME

Your capital can produce maximum profits only if you give it the chance for maximum turnover.

You can release capital tied up in accounts receivable and accumulated seasonal inventories through FACTORING — the time-tested method of stimulating capital turnover and of controlling the vital cash flow.

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NEW REFRACTOMETER

Read the percent of solids (which generally means percent of size in yarn) at a glance!

Moderately priced. Distributed exclusively to the Textile Industry through:

NEMO Industries, Inc.

METALLIC CARD FLATS

1. Will reduce flat strips 40 to 60% without affecting the quality.
2. Requires no grinding.
3. Will card equally as well with metallic, hardened points, or conventional wire on cylinder.

NEMO INDUSTRIES, INC.

3081 MAPLE DR., N.E., ATLANTA 5, GA.

longer stripping cycle, the device, which is called the "Constant Card," improves carding action by maintaining a constant fiber load on the cylinder, saves fiber, and improves quality of sliver produced.

Applicable to any existing card, the apparatus has an adjustable control system for any kind of production and is used efficiently with cotton, synthetics, or blends.

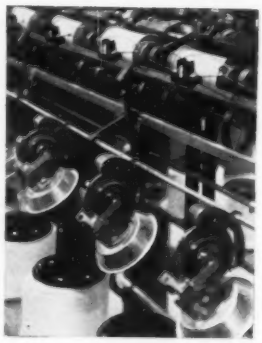
There are three basic components: (1) a vacuum generator which is mounted on the side of the card and is driven from the spare cylinder V-pulley; (2) a flexible vacuum transmission system designed to permit the use of full-size laps and spaced to accomodate the conventional upper deck lap storage; and (3) a fiber collector which slowly traverses the full width of the cylinder.

This apparatus was developed in Spain and has been used in European mills for a number of years. Availability of the foreign-made model through a U.S. agent was announced in T.I. for Nov., 1955. Now the equipment will be manufactured in the United States and sold to mills in North America by Pneumafil Corp., under exclusive license.

Pneumafil Corp., 2516 Wilkinson Blvd., Charlotte, N.C.

Do you want more data? Write ◂ or use card on page 187; list F-117

Provides constant tension at redrawing winder



The Kiddie Redraw Compensating Tension is designed to maintain a preset tension to yarn as it is wound on the spool from any type supply package.

The yarn is accurately tensioned in this unit by passing between two spring-loaded discs and a control arm. The control arm relieves the disc pressure being applied to the yarn until it produces a tension equal to the force being exerted on the control arm by a spiral spring set at the desired tension. As tension variations occur, the control arm is activated and, working in conjunction with the discs, constantly varies the pressure which the discs are applying to the moving yarn so that the output tension remains constant.

This compensator can be quickly set for any tension up to 45 grams. It is particularly adaptable to Kidde-Sipp winders, or by means of simple brackets, it is adaptable to any make redraw winder.

Kidde Textile Machinery Corp., 35 Farrand St., Bloomfield, N. J.

Do you want more data? Write ◂ or use card on page 187; list F-118

Leno heddle offers complete freedom of movement

The Stehedco Duplex Doup Heddle for leno is a flat steel heddle that provides complete freedom of movement. Even the friction usually caused by rubbing of the needle between the standards is greatly reduced by the welded construction which provides a positive opening for the needle.

The parallel legs of the standards set freely between the spread legs of the needle completely eliminate the problem of resistance to the shedding movement, excessive wear, and skipping in the weave.

Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia 32, Pa.

Do you want more data? Write ◂ or use card on page 187; list F-119

30" beams cut tricot knitter downtime

A 30" diameter forged head beam, made of aluminum alloy for use on tricot and raschel knitting machines, will accommodate twice the amount of yarn now put on 21" diameter beams and cuts in half previous downtime for threading-in operations.

The new beam has been subjected to extensive testing over the past two years. Destruction tests have proven that it will withstand pressures far beyond the load imposed under normal operating conditions.

Milton Machine Works, Inc., Milton, Pa.

Do you want more data? Write or use card on page 187; list F-120

Electric eye accurately guides textiles

A new photoelectric control system for maintaining constant lateral position of moving materials such as tufted, woven, and non-woven fabrics offers the following advantages: (1) sensing head does not touch the material being controlled; (2) controller operates directly from the photocell; (3) it corrects lateral run-outs almost instantaneously.

Major components of the system are a photoelectric sensing head, a powerpack or regulated power supply to furnish power to the sensing head, an electrohydraulic edge position controller, and a hydraulic cylinder for positioning backstands, windup reels, guide rolls, etc.

GPE Controls, Inc., 240 East Ontario St., Chicago 11, Ill.

Do you want more data? Write or use card on page 187; list F-121

Metallic card clothing with fabric foundation

Development of a metallic clothing with a fabric foundation very similar to that of conventional card clothing was recently announced by the U. S. agent for the Swedish card clothing manufacturer, AB Kardbeslag.

Called Flexible "Stripless" Metallic Clothing, it offers these advantages over conventional metallic clothing: (1) easier to mount on card; (2) lighter in weight, resulting in a steadier running machine; and (3) easier to repair damages to the clothing created by accidents of any kind.

Carding capacity and grinding intervals are the same as for conventional metallic clothing.

Oliver D. Landis, Inc., 1805 W. Franklin Ave., Gastonia, N. C.

Do you want more data? Write or use card on page 187; list F-122

New yarns and fibers

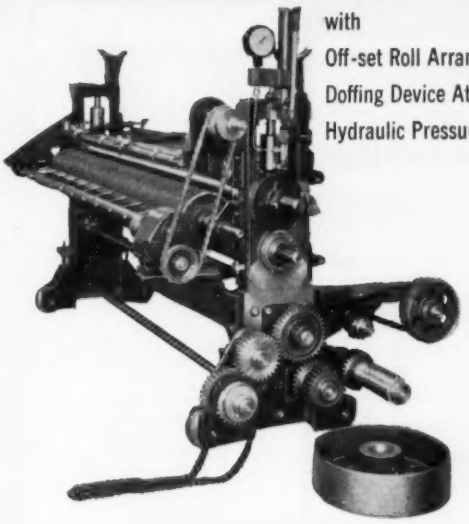
A flat, strawlike monofilament rayon yarn, called "Strawn," is especially suited for use in upholstery and drapery fabrics. Produced in 450 and 1250 deniers in both bright and dull lusters, the yarn is available in skeins or packaged on spools or cones. It may be easily and uniformly piece dyed or yarn dyed. Cross dyeing with other yarns is also possible.

Industrial Rayon Corp., Union Commerce Bldg., Cleveland, Ohio.

Do you want more data? Write supplier or use card on page 187; list F-201

Lurex metallic yarn on beams. A program to help customers obtain Lurex metallic yarns on beams has been

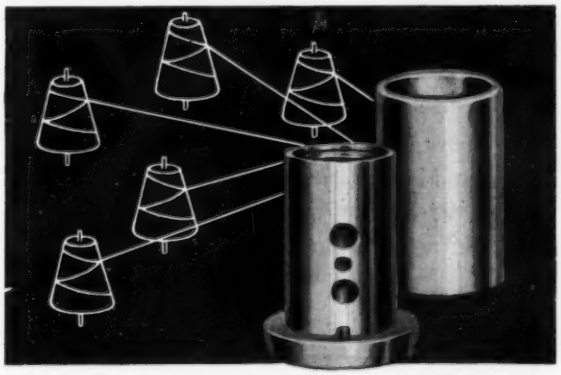
NEW "LIGHTWEIGHT" PERALTA® MACHINE



with
Off-set Roll Arrangement
Doffing Device Attachment
Hydraulic Pressure

Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25



Johnson Bronze offers quick delivery on a full line of high quality Textile Replacement Bearings

Johnson Bronze can deliver a large variety of textile machinery replacement bearings from stock. These special bearings are made to the same specifications as the originals which they replace, and will give the same satisfactory service.

The fast Johnson service on bearings for all types of textile machinery, and the high quality of their products make Johnson Bronze your best source for replacement bearings. Write for free literature, requesting Folder JBL-9. Johnson Bronze, 530 S. Mill St., New Castle, Pa.

JOHNSON Bearings

Johnson Textile Bearings

Subsidiary: Apex Bronze Foundry Co., Oakland, Cal.

A DEPENDABLE SOURCE OF SUPPLY

THOMASTON Fabrics

Industrial Textiles

such as:

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other available facilities:

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announced. It enables mills to overcome low sley limitations of the cotton system slasher and permits manufacture of top beams of Lurex for two-beam work where facilities are not available in the mill to do so. The program also reduces the need to work with "skinny" spools in the mill. Mills may request shipment of Lurex to a commission warper of their choice or request the yarn producer to suggest one.

Textile Fibers Dept., Dow Chemical Co., Williamsburg, Va.

Do you want more data? Write supplier or use card on page 187; list F-202

Dynel in four new dope-dyed colors. In addition to the seven previously announced shades, dope-dyed dynel acrylic fiber is now available in green, blue, pewter, and caramel. The new colors enhance the appeal of deep pile outergarments by providing them with other than "fur look" shades.

Union Carbide Chemicals Co., Textile Fibers Dept., 100 E. 42nd St., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 187; list F-203

Textured glass yarns. Glass fabrics that look like linen or wool fabrics may be produced from Fiberglas Aerocor Yarn, a glass yarn that is fluffed up or "bulked" during manufacture by shooting jets of air into the yarn. Fabrics made from it have properties of other glass materials, plus the advantages of lightweight bulk and added texture.

The development of Fiberglas Coro-Dyed yarn, which is the Aerocor yarn that is dyed prior to weaving, makes it possible to create multi-color effects—tweeds, stripes, plaids, and checks in glass decorative fabrics.

Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Do you want more data? Write supplier or use card on page 187; list F-204

Metallic yarn for heavy fabrics. Where exceptional strength is required, Metlon H. T. (high tenacity) Mylar yarn offers the advantage of extreme tensile strength in standard constructions. In addition to exceptional washability, heat resistance, durability, and dyeability, the yarn provides approximately twice the strength of regular Mylar yarns, with fewer yarn breaks.

Metlon Corp., 432 Fourth Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 187; list F-205

Sewing machine assures seam elasticity

A two-needle, four-thread, differential feed machine recently announced makes a 4-thread stitch having a 3-thread cover or overedge stitch with paralleling reinforcing needle thread—a modified Type 507 stitch that provides great elasticity.

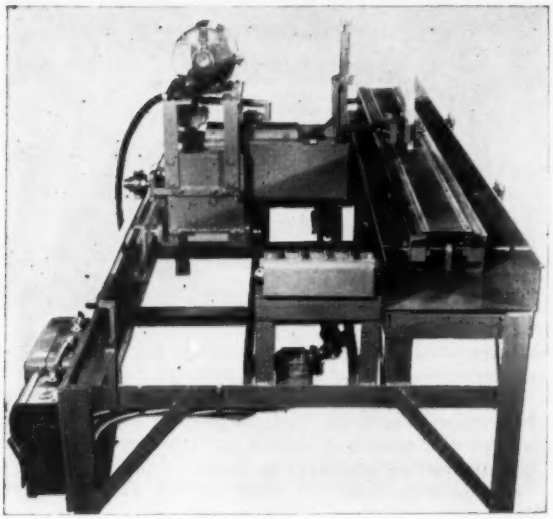
Designated Style 39500 W, the machine is designed especially for seaming operations where maximum seam elasticity is required and for seaming fabrics that are sleazy or require additional security in the seam. It is recommended for various seaming operations in the manufacture of bathing suits, knit undergarments, etc. This versatile machine can also be used on similar garments of light to medium heavy weight knitted and woven materials of cotton, wool, silk, and synthetics.

Several features are incorporated in the machine to assure precision and accuracy: The loopers are independently adjustable for precision adjustments. Independently operated and adjustable feed dogs insure a consistently uniform seam appearance. Lubrication is completely automatic.

Union Special Machine Co., 400 N. Franklin St., Chicago 10, Ill.

Do you want more data? Write ◂ or use card on page 187; list F-123

Reed grinding machine

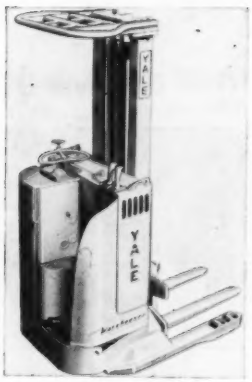


A reed stoning machine is designed to grind or stone reeds in such a manner that the edges of the dents are rounded. Some of its features: (1) all gearing oilbath lubricated; (2) all-steel welded frame; (3) head movement rather than reed movement to conserve floor space; (4) self-aligning, shock-mounted stone that is easily adjusted to any reed height; and (5) automatic reversing and stopping at completion of reed.

C. A. Lausberg & Sons, Inc., 351 Clinton St., Haledon, N. J.

Do you want more data? Write ◂ or use card on page 187; list F-124

Efficient electric lift truck for narrow aisles



A "Warehouser," narrow-aisle, electric-powered lift truck incorporating a 24-volt electrical system, which with a host of design innovations to increase operational efficiency provide for the accomplishment of more work, has been introduced. Built in 2000-, 3000-, and 4000-pound capacity straddle-stacker models, the new trucks will work comfortably in aisles less than six feet with normal loads.

Other features are: improved operator visibility, convenient placement of controls, easy accessibility of all working parts for service, and the provision of operational accessories to increase the efficiency of the operator.

Provision of a 24-volt electrical system in the truck increases the over-all operating efficiency by lowering the amperage required to move and raise loads. The higher voltage provides a high speed of lift and the capacity to work a full shift under severe duty cycle conditions with no loss of efficiency.

Yale Materials Handling Div., The Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Do you want more data? Write ◂ or use card on page 187; list F-125

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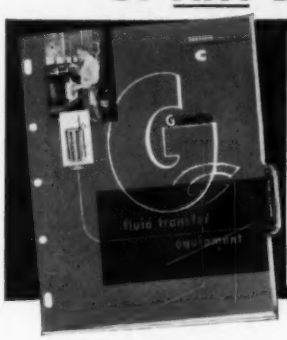

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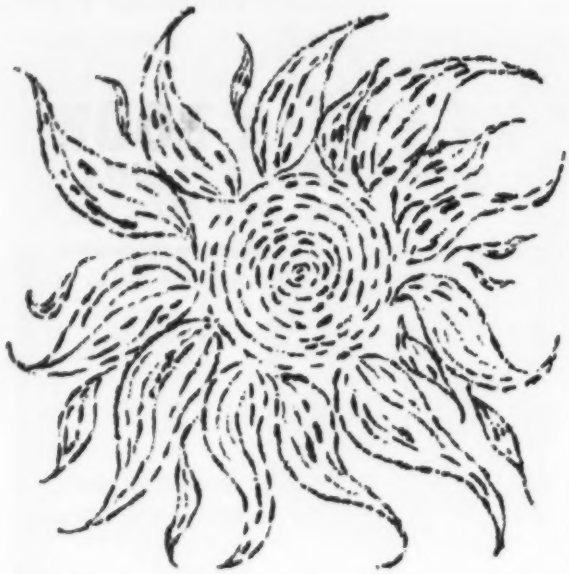

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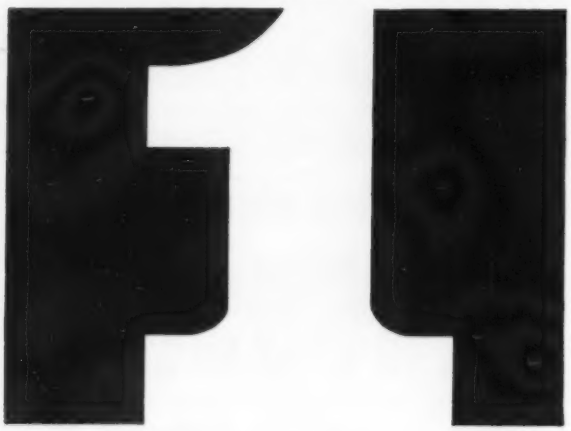

The introduction by Sandoz, of Cuprofix, and the line of Cuprofix dyes, effected a phenomenal improvement in the wash fastness of direct dyed fabrics. Today Cuprofix retains its distinction as *the* "homogeneous" copper-containing fixing agent. It is still the outstanding product for protection of— **1. Colorfastness throughout repeated washings. 2. Fastness to light.** For applications where a fixing agent without copper is preferred, Sandofix WE is the standard for high quality work. Call or write: Sandoz, Inc., 61-63 Van Dam Street, New York 13, New York, ALgonquin 5-1700, for details.——

Sandoz

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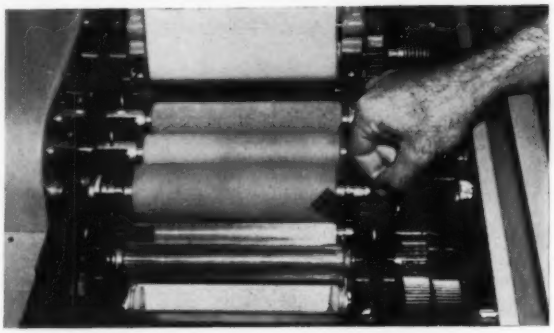
Clean these comber selvage guides easily



A comber selvage guide makes short work of doff-time guide cleaning. The member is made of Formica in five sizes to meet all requirements. Pivoting on an adjustable stud screwed into the top roll bearing assembly, it is raised out of operating position and into cleaning position by a slight lifting motion of the hand.

Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 187; list F-126

Accumulator features safety-lock carriage

A cloth accumulator features automatic protection against personal injury by falling carriage should cloth break. A free-riding pivot arm attached to the under side of the carriage rides in a vertical zig-zag track. Any sudden downward motion of the carriage causes the rider wheel to lock in one of the slots in track, thus effectively stopping carriage. It stores 40 yards of material for continuous operation.

Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

Do you want more data? Write ◂ or use card on page 187; list F-127

Semi-automatic machine speeds soft goods packaging

A high-speed poly bag baling machine is engineered for single or multiple packaging of a variety of soft goods products, permitting the baling of soft goods far more rapidly than conventional hand bagging techniques. It produces an attractive, tight-to-product fit at less than one-third the cost of conventional boxes.

Operating semi-automatically, a single machine is capable of speeds of 500 to 1000 baler packages an hour. It provides snug, protective poly bag packaging for shirts, sox, towels, sweaters, and other items regardless of size.

Compact and designed for rapid integration into existing packaging lines, the machine is fully equipped for im-

mediate operation. It handles polyethylene, paper, cellophane, and Mylar bags with equal facility without changeover or special fixtures.

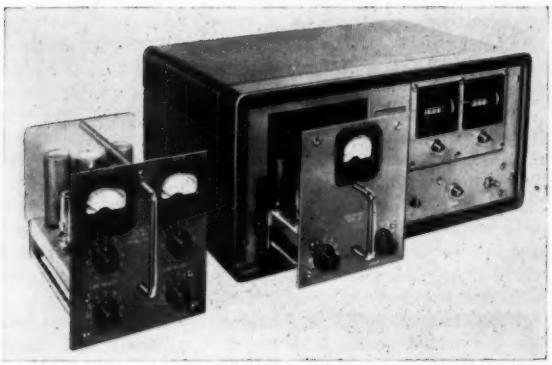
The machine performs this way. The baler-bagger automatically feeds bags upward to the operator. A jet of air blows and holds open each exposed top bag for product filling by the operator. Specially shaped, stainless steel product guide arms, pivoting on heavy duty bearings, permit the product to glide quickly into the open bag. Filled packages are then slid onto a conveyor for transport to the closure station. Filling of bags is thus performed in one rapid sweeping motion, leaving the next bag exposed and automatically opened for instant filling.

A finger tip control knob adjusts force of the blower air stream to compensate for bags of different weight materials. Another fingertip knob controls the upward feed of bags which rise automatically from the large bag storage bin housed in the machine. Knurled steel adjustment screws enable the machine to handle a range of different size products and bags without changeover.

Tele-Sonic Packaging Corp., 203 West 27th Street, New York City.

Do you want more data? Write ◂ or use card on page 187; list F-128

Greater yarn inspection control



Greater control of a combination of textile inspection equipment, plus significant savings, is offered in the Multicontrol Model 602. The unit can be used with various modular plug-in amplifiers to control two Automatic Yarn Inspectors, End Break Detectors, or Thread and Line Inspectors, or a combination of any two of these devices. Additional amplifiers provide control for a Spun Yarn Inspector or Slave-Master Yarn Inspector operation. The unit is used in conjunction with these electronic and photo-electric devices to count defects in these operations, and can be set to automatically stop production machines when a non-permissible defect is registered, thus improving yarn quality appreciably.

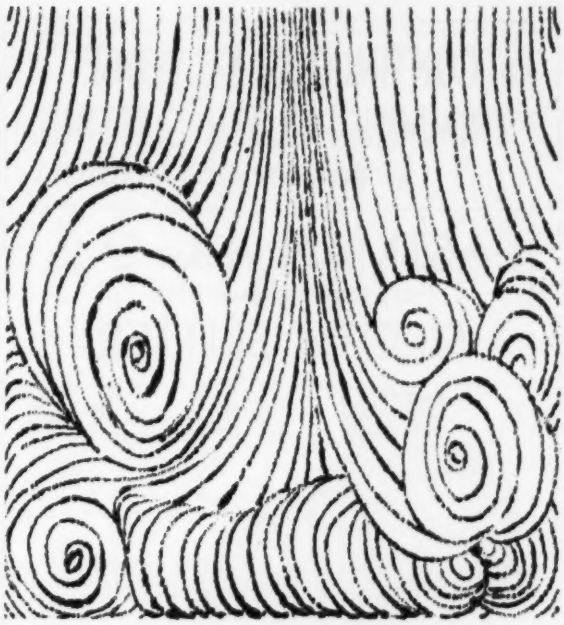
Broad band amplifiers in the plug-in units, available in single or dual amplifier modules, permit detection of defects of almost any configuration.

A visible fail-safe device is incorporated to indicate instantly failure or reduced sensitivity of the phototube, or the burnout of the lamp. This eliminates the possibility that yarn will pass uninspected due to these causes.

New circuitry increases the life of the phototube many times, while the lamp, with feed-back control, offers exceptional sensitivity and stability.

Lindly & Co., 248 Herricks Road, Mineola, L. I., N. Y.

Do you want more data? Write ◂ or use card on page 187; list F-129



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*T. M. DuPont polyester fiber †T. M. DuPont acrylic fiber ‡T. M. Union Carbide Chemicals Co.

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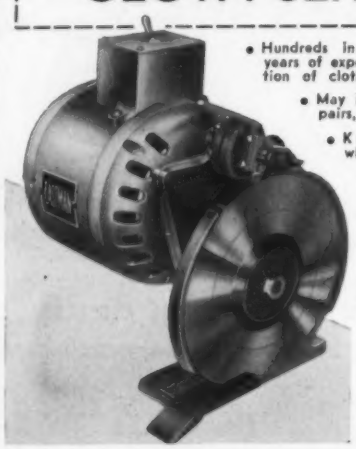

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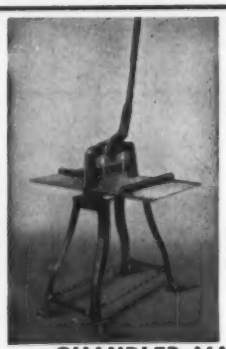

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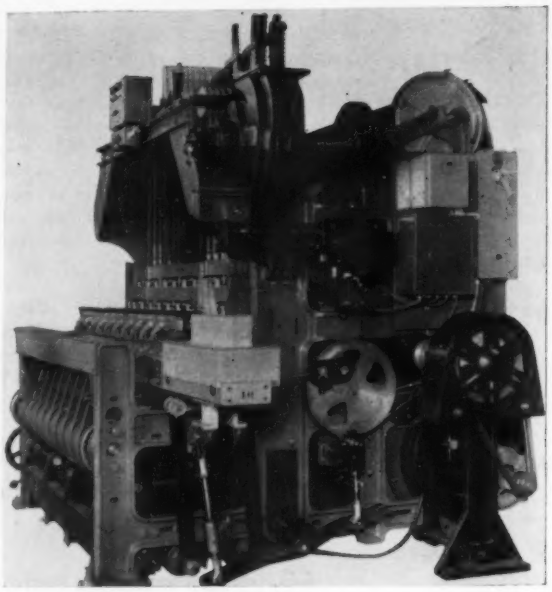
Higher speeds from narrow-fabric loom



The 54-inch Power-Fab narrow-fabrics loom is designed to produce heavy webbing at speeds as high as 250 ppm (up to 300 ppm on the lighter goods). The loom enables the producer to increase his variety of narrow fabrics with a minimum of mechanical changes.

Important advantages to be derived from its use are; (1) higher loom speeds; (2) maximum space utilization; (3) increased versatility; (4) more looms per operative; and (5) higher loom efficiencies.

The unit is equipped with a pin-roll take-up motion with upper and lower tension rolls. The breast beam and take-off roller are mounted on ball bearings, acting as a warp tension equalizer. It employs a 1¾-inch diameter quill for the heavier webbing.

Individual harness frame guides reduce the harness load for the entire loom. The heavy cam shaft and large-diameter cams provide easier and smoother lift at higher speed. Standard 54-inch beams are employed, double- or triple-decked to suit ply-fabric production.

Fletcher Works, Second and Glenwood Ave., Philadelphia 24, Pa.

Do you want more data? Write ◂ or use card on page 187; list F-130

Quality control equipment

Six quality control instruments, made in England by Louis Newmark, Ltd., under license from the British Rayon Research Institute, are available through a supplier in the United States. Sold under the general trade name of Manra, the equipment includes:

A yarn filament counter that counts up to 100 filaments with absolute accuracy. Above that number, error of one to three per cent may be encountered.

A Vibrascope that determines yarn counts or deniers with an accuracy of 1/10 of a denier. It is intended for both production and laboratory use.

A Strainometer for determining if yarn has been over-strained during winding. It has a replacement head for measuring the tension of running yarn.

A yarn tension transducer for continuously measuring

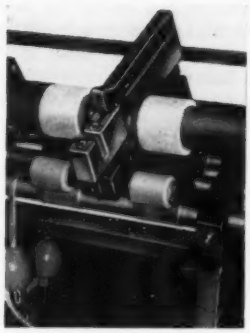
and recording yarn tension.

A warp tension balance for measuring the difference in tension between two yarns such as warp or pile ends. The sixth item is a *crimp tester.*

Sitellamcor, Inc., 10 East 43 St., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 187; list F-131

Spring-loaded tops rolls for Whitin roving frames



The Whitin "Unitrol" spring-type weighting arrangement which has for some time been used for top rolls on spinning frames may now be purchased for installation on Whitin roving frames.

The arrangement assures accurate control of the weighting and excellent performance of the two-apron drafting system. Lubrication is virtually eliminated, and cleaning of the whole area is made substantially easier.

The arm contains accurately calibrated springs for applying weights of 50 lb, 25 lb, and 25 lb on the first, second, and third rolls respectively. It holds the top rolls in accurate alignment with the bottom rolls. The assembly is equipped with an anti-friction top roll at the front and non-lubricated type middle and back rolls.

The area between the bottom of the roll stands and the roller beam is completely open, facilitating cleaning.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◂ or use card on page 187; list F-132

More efficient static eliminator for warpers

A textile static eliminator now available achieves higher efficiency through two basic design changes:

One is in the shape of the electrode shield. The square shape permits the yarn sheet to come much closer to the electrode head without risk of damage to the yarn.

The second design change is in the construction of this shield. The top surface is one continuous slot which extends the full length of the shield. The bottom, opposing surface, is perforated. This "through" construction permits ionization to create an upward draft which increases the ion dispersion rate. It minimizes the collection of dirt within the shield which causes invisible "tracking," and also minimizes the collection of solvents on electrode heads which might cause toxic gases when the current is on.

The slot, by extending the full length of electrode bar and heads, eliminates the dead metal usually found in a shield. It creates a continuous bar of ionized air that insures all yarn ends get equal relief.

The "through" construction design allows this unit to be assembled with either the slot or the perforations directly under the yarn sheet.

Each new static eliminator consists of a power supply and the three bar assemblies required for warping operations.

Lindly & Co., 248 Herricks Rd., Mineola, N. Y.

Do you want more data? Write ◂ or use card on page 187; list F-133

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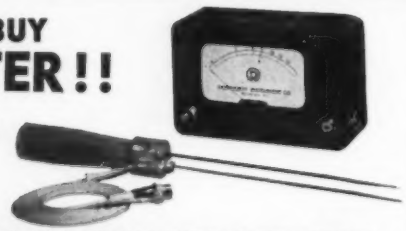

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Frank A. Hoppe, Inc., 2314 N. 8th St., Philadelphia 33, Pa.

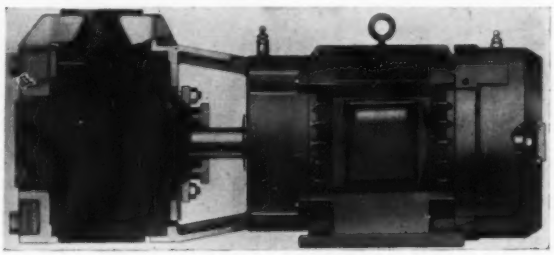
Do you want more data? Write supplier or use card on page 187; list F-206

Pulley affords instantly variable ratios to 3 to 1. A new variable speed pulley that provides ratios up to 3 to 1 at 3⅓ hp at 1150 rpm or 5 hp at 1750 rpm is easily and quickly installed on old or new equipment. Designated the No. 3050 Variable Speed Pulley, it changes speed instantly with just finger-tip pressure while the machine is in motion. Both pulley faces move constantly and equally to give constant belt alignment.

Lovejoy Flexible Coupling Co., 4949 W. Lake St., Chicago 44, Ill.

Do you want more data? Write supplier or use card on page 187; list F-207

Corrosion-resistant centrifugal pumps are available in three new sizes. Known as Karbate models 22-FAL, 28-FAL, and 31-FAL, the pumps are equipped with 1-, 1½-, and 2-hp 1750-rpm motors. At that speed the latter two



types can deliver up to 150 gallons per minute. The two larger pumps are available with 3- or 5-hp motors for handling fluids of higher specific gravity than water. Maximum total head for each of the pumps is 33, 51, and 67 feet.

National Carbon Co., 30 E. 42 St., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 187; list F-208

Lets one man loosen hard-to-get-at frozen joints. With the "Ridgid" Compound Leverage Wrench, one man can do the work of two. Pressure applied on the extra-sturdy handle is multiplied by two as the adjustable hook jaw turns the pipe in one direction, while the offset chain vise head grips the fitting and exerts an equal pressure in the opposite direction. The wrench can be used to tighten or loosen right or left hand threads, with the pipe on either side of the fitting. Short handle for jaw size makes it ideal for close places.

Another new item is the "Ridgid" No. E-110 Offset Hex Wrench for use on nuts and fittings that are in close places. Easy-on, non-slip, multi-sided grip gives extra leverage on all hex nuts, square nuts, etc.

The Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 187; list F-209

Convenient way to permanently mark fabrics. With the "Textile Magic Marker" Model 83 and Speedry Type "T" ink it is easy to mark all fabrics, and the ink stays on through innumerable launderings and dry-cleanings. Design features ball-nib and valve action in an unbreakable plastic squeeze bottle and allows for controlled small or bold writing as required without clogging or "gumming up." Ink is opaque and available in

four colors suitable for use on light or dark fabrics.

Speedry Products, Inc., Richmond Hill 18, N. Y.

Do you want more data? Write supplier or use card on page 187; list F-210

Battery-powered heavy-duty sweeper. The Tennant Model 80-E sweeper sweeps 8 hr on a single battery charge. Traveling at speeds up to 4.5 mph, it has a maximum cleaning path of 53", including side brush (for flush-with-wall sweeping). Two 1 hp d-c motors (one for propelling, one for sweeping) are used in combination with an interbalanced brush-and-vacuum system.

G. H. Tennant Co., 721 N. Lilac Dr., Minneapolis 22, Minn.

Do you want more data? Write supplier or use card on page 187; list F-211

Temple rolls that are equipped with Perlon bushings and flanges that do not require lubrication, and fitted with rounded-point pins that do not pierce the yarns (points glide between ends and picks), are designed with an unusually short distance between the first temple ring and the temple bracket to lead the cloth as closely as possible to the cutter. Called Harnisch Nomark, and made in Germany, the temple rolls are custom made to specification, using different types, sizes, shapes, and lengths of pins to meet the cloth requirements.

Lenkotex Co., Inc., 136 Liberty St., New York 6, N. Y.

Do you want more data? Write supplier or use card on page 187; list F-212

A formaldehyde-fume killer called Eastonair is available in 30-lb packages. The compound is activated by removing the lid and setting the container in an air duct, register, plenum chamber, or (under static conditions) on shelves, under tables, etc., wherever formaldehyde odors are a problem in wash-and-wear finishing. It is also effective for very low concentrations of amine or fish odors issuing from triazone resin systems.

Easton R. S. Corp., 876 Pacific St., Brooklyn 38, N. Y.

Do you want more data? Write supplier or use card on page 187; list F-213

Controlled-volume pumps for the chemical processing industries have maximum capacities to 29 gallons per hour and will meter against pressures to 1900 psi. Using standard speed motors, several of these pumps can be coupled to a single motor, yet each pump will have its individual capacity adjustment. The drive unit and speed reducer combination of the Milroyal pumps permits manual or automatic adjustment of capacity from 0 to 100 per cent.

Milton Roy Co., 1300 E. Mermaid Lane, Philadelphia 18, Pa.

Do you want more data? Write supplier or use card on page 187; list F-214

Electrically powered industrial tractors that can be operated either as rider types or "walkie" vehicles are offered in six models with electrical systems of 12, 24, or dual 12/24 volts. These Model RT tractors have traveling speeds ranging from three to six mph and are equipped with Roto-Cam control handles which have all operating controls plus the horn in a single location.

Lewis - Shepard Products, Inc., Dept. R8-23, 125 Walnut St., Watertown 72, Mass.

Do you want more data? Write supplier or use card on page 187; list F-215

Wash-and-wear test patterns are available in kit form. Incrementally covering the established range of wash-and-wear performance, the patterns (five per kit) constitute a handy scale for evaluating test specimens by fixed procedures. Fabric samples are washed and dried

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according to controlled conditions specified by the American Association of Textile Chemists and Colorists, then their wrinkle patterns are compared visually with those of the three-dimensional standards from the kit. Each specimen is assigned the rating of the standard it matches.

Monsanto Chemical Co., Dept. WW, Springfield, Mass.

Do you want more data? Write supplier or use card on page 187; list F-216

"A" frames in one- and two-ton capacities are offered as complete kits for forming the bases of mobile cranes. The legs are made of steel tubing and are fitted with industrial casters with antifriction bearings in the wheels, plus ball-type thrust bearings at swivel points to insure easy movement of the loaded frame. A standard "I" beam can also be supplied to tie together the frames and serve as support for hoisting equipment.

Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div., Muskegon, Mich.

Do you want more data? Write supplier or use card on page 187; list F-217

An advanced safety and convenience stopping feature is now available with new Continuous Roll Feed units. The device eliminates the dangerous practice of trying to stop cloth manually. Additionally, less operator attention is required when the new roll is to be sewed on—it simplifies handling of grey cloth from the looms.

Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

Do you want more data? Write supplier or use card on page 187; list F-218

Speed changers in horizontal and vertical units offer instant, smooth speed variations. Among the features of the Vari-Tex speed changer are: low weight per horsepower; small physical size; "in-service" lubrication; and large case openings to permit easy internal maintenance. Efficiency is approximately 78 per cent. Stepless speed changes are obtained by rotating an external hand wheel —a speed range indicator is included. Speed ratios, dependent on size, range from 10 to 1 in the 1-, 1½, 2-, and 3-horsepower sizes to 4 to 1 in the 40, 50, and 60-horsepower sizes.

Allis-Chalmers Mfg. Co., 1054 S. 70 St., Milwaukee 1, Wis.

Do you want more data? Write supplier or use card on page 187; list F-219

Shaft-mounted speed reducers in sizes up to 40 horsepower and with nominal internal gear ratios of 5 to 1, 15 to 1, and 20 to 1 are available in single and double reduction units. They can easily be adapted without disassembly to include back stops where reverse rotation is prohibited and overload releases for chokable conditions. The reducer may be driven either by variable-pitch or fixed-diameter pulleys.

Allis-Chalmers Mfg. Co., 1054 S. 70 St., Milwaukee 1, Wis.

Do you want more data? Write supplier or use card on page 187; list F-220

A block-type deodorant called Oxlab uses chlorophyll as the deodorizing medium. The block holders (silver-colored metal) are easy to attach anywhere.

Acme Chemical Products Co., Div. of The Selig Co., P. O. Box 1518, Atlanta 1, Ga.

Do you want more data? Write supplier or use card on page 187; list F-221

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d-2

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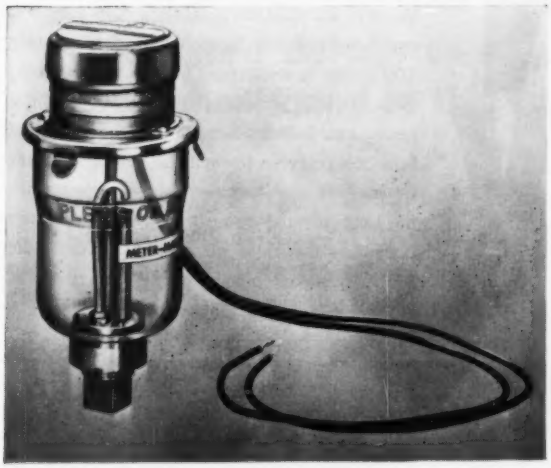

lubricating oils automatically from a drop every 30 seconds to a drop every 10 minutes. The oil drop is forced to a visible point where the drops may be checked.

Plews Oiler, Inc., 701 S. Seventh St., Minneapolis 15, Minn.

Do you want more data? Write supplier or use card on page 187; list F-222

Industrial conveyor belts (Koroseal covered) are offered in a variety of weights and sizes and with a variety of Koroseal thicknesses. They are recommended for use where contact with cutting oils and greases is inevitable, for handling wet, sticky materials, for textile use where smooth, nonporous, nonmarking belts, etc., are required.

B. F. Goodrich Industrial Products Co., Akron, Ohio.

Do you want more data? Write supplier or use card on page 187; list F-223

New books

The Handbook of Industrial Loss Prevention, by Factory Mutual Engineering Division, is a comprehensive reference of methods and data on protecting textile mills and other industrial plants and processes from all common hazards, such as fire, explosion, wind, lightning, etc. Industrial engineers, plant engineers, and management personnel will find many suggestions for minimizing the possibility of widespread damage from one cause or another, for substantially reducing insurance premiums, and for protecting more fully lives, property, and equipment and materials. McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y. Price, $20.00.

A new edition of *Compilation of ASTM Standards on Textile Materials (D-13)* has been published. It provides methods of tests, tolerances within which textiles must come in order that they shall constitute good delivery on contract, and specification requirements—standards of quality. New standard methods of test on Extractable Matter in Oven Dried Wool, Fiber Length of Wool and Moisture in Wool by Oven Drying are included. There are 128 standards in the volume, of which 30 are recently revised or have had their status changed, and eight are new. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. Price, $7.50.

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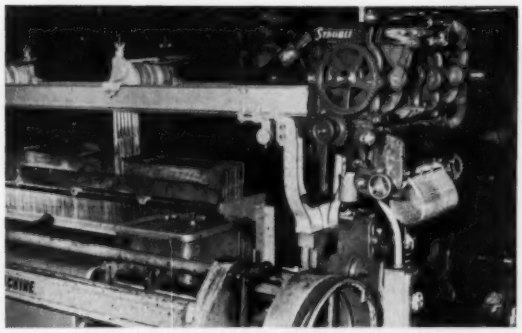

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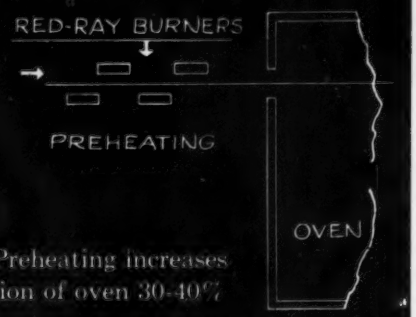

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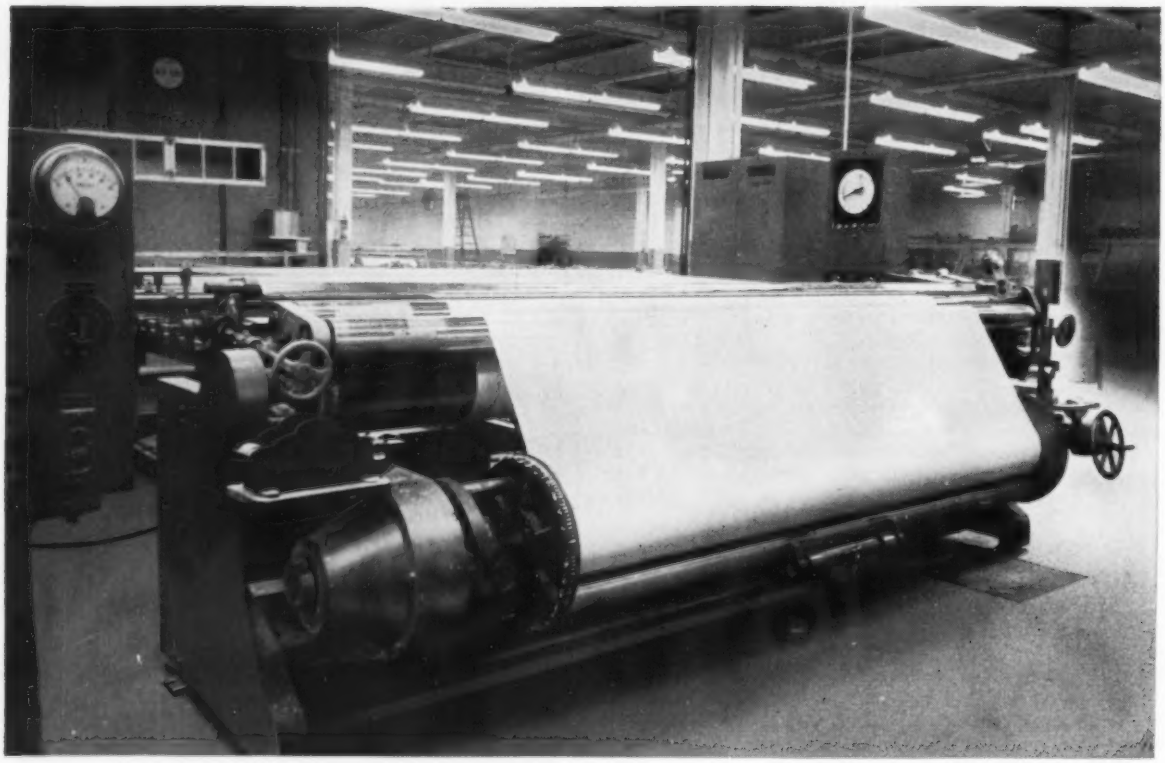

PROVED IN MILL OPERATION — West Point's new slasher head end is already producing in more than a dozen mills on a wide range of warps from wide sheeting and heavy duck to the lightest print cloth warp. (West Point has more slashers running on wide warps than all other slasher manufacturers combined.) Power transmission to this mill-proved head end is the simplest and most efficient yet devised . . . the same as the spline-shaft drive used on the most expensive machine tools. No worm gear reducer, no gear motor, no torque tube, no universal joints! What could be simpler and less troublesome than chain and V-belt drive with replacement parts available from any mill supply house? The new high speed head is one component of West Point's new PACESETTER multi-cylinder slasher, the slasher that is *tops in quality.*

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FREE BOOKLETS

6-1 CASTERS FOR INDUSTRY. Contains illustrations, descriptions, and specifications of swivel-plate and rigid-plate truck casters with load capacities ranging from 100 pounds to 15,000 pounds. Catalog #159, Faultless Caster Corporation, Dept. PR-74, Evansville 7, Indiana.

6-2 TIMING BELT DRIVE. Booklet describes the "Time-Tex" timing belt drive which is constructed with steel cable cords imbedded in neopreme and molded with nylon base fabrics. Allis-Chalmers Manufacturing Co., Box 512, Milwaukee 1, Wisconsin.

6-3 "SUPER CORDURA". Technical booklet describes DuPont Adhesive-Finished High Tenacity Rayon, including compatible rubber stocks, yarn properties, and adhesion levels. Textile Fibers Department, Industrial Merchandising Section, E. I. Du Pont de Nemours, Inc. Wilmington 98, Delaware.

6-4 ENKA NYLON. Brochure explains the different characteristics of Enka nylon and its applications to various types of knitted apparel fabrics and hosiery. American Enka Corporation, 520 Fifth Avenue, New York 36, New York.

6-5 CARGOTAINERS. Bulletin illustrates and describes the company's complete line of materials handling equipment for industry. Gives information on sizes, weights and capacities of Cargotainers. Tri-State Engineering Company, 295 W. Beau St., Washington, Pa.

6-6 AUTOMATIC LOOM LUBRICATION. Bulletin describes an automatic lubricator that services up to 73 bearings on Draper X-2, X-D, and XP-2 Model Looms. Also includes applications to Knitting Machines. Bulletin NB-23, Bijur Lubricating Corp. 151 W. Passaic St., Rochelle Park, New Jersey.

6-7 LOOM CLEANING. Booklet describes Oscillaire loom cleaning which is applicable to wide variety of looms, products and mill conditions, whether cotton or synthetics, fine or coarse fabrics. Gives actual installation pictures. Parks-Cramer Co., Fitchburg, Mass.

6-8 WARP SIZE FOR SYNTHETICS. Booklet describes new series of starch derivatives which perform so well that they are being used as the standard sizing agent for pilot plant tests on all types of spun synthetic yarns by one manufacturer. A. E. Staley Manufacturing Company, Industrial Sales Department, Decatur, Illinois.

6-9 BALL BEARING TROLLEYS. 20-page illustrated book gives complete information on ball bearing trolleys. Load ratings, attachments, dimensions, and similar engineering data are given. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

6-10 COMPRESSORS. For oil-free air. Class CRX, Horizontal Single Stage, Carbon Piston Compressors. Up to 901 cfm displacements, 150 psi. Features, specifications given. Bulletin CRC-10, Gardner-Denver Company, Quincy, Illinois.

6-11 INCREASED WEAVING EFFICIENCY. Technical data sheet describes "Miralloid" Acetate Gum, a thick-boiling, non-congealing corn starch derivative developed specifically for warp sizing of fine combed cotton worsted, and worsted-synthetic blend yarns. A. E. Staley Mfg. Co., Decatur, Illinois.

6-12 ANTI-STATIC FIBER LUBRICANT. Bulletin describes how anti-static fiber lubricant provides an unusually high degree of static control and effective lubrication for all natural and synthetic fibers. Bulletin #414, Every Industries, Inc., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

6-13 COMPRESSORS. WB two-stage water-cooled. Space-saving units require modest foundation up to 125 psi and 1150 cfm displacement. Bulletin WB-10. Gardner-Denver Company, Quincy, Illinois.

6-14 GEARMOTORS, MOTOGEARS, AND FLUID DRIVES. Catalog supplies complete information on double, triple, and quadruple reduction gearmotors and motogears. Electrofluid and fluid drives are also explained. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

6-15 CONTINUOUS STARCH COOKER. Booklet shows how the use of continuous cookers for starch assures accurate control, economy, low maintenance in warp sizing and finishing. Clinton Corn Processing Company, Clinton, Iowa.

6-16 "BONDED COLORS". Color card details forty "Bonded Colors" which form an actual bond with the cellulosic fibre and are therefore exceptionally fast to washing and light. Franklin Process Co., 564 Eddy St., Providence, R. I.

6-17 EDGE GUIDE. Bulletin 22-1 gives information on efficiency, accuracy and versatility of edge guide. Illustrations include controls for any operation on any fabric. G.P.E. Controls, Inc., 240 East Ontario St., Chicago 11, Illinois.

6-18 AUTOMATIC TURNTABLE DETWISTER. Booklet entitled "Be Kind to Cloth and Profits" describes fast, dependable detwister which handles "ornery" twists in cloth. Mount Hope Machinery Co., 15 Fifth Avenue, Taunton, Mass.

6-19 DRIVE BULLETIN. Describes the complete line of variable speed drives which provide precise, infinitely adjustable output speeds from a constant rpm. motor source. Reliance Electric and Engineering Company, 27401 Euclid Avenue, Cleveland 17, Ohio.

6-20 TEXTILE CHEMICAL LIST. Booklet contains complete listing of all products manufactured for use in textile finishing. Apex Chemical Company, Inc., 200 South First Street, Elizabethport 1, N. J.

6-21 AIR COMPRESSORS. Bulletin gives specifications, photographs, and describes advantages of complete line of air compressors. Lincoln Engineering Company, 4010 Goodfellow Blvd., St. Louis, Mo.

6-22 PILLING TESTER. Booklet contains technical information on random tumble pilling tester. Includes features, advantages, recommended uses and gives detailed reports on preparing various materials for testing. E. I. DuPont, De Nemours & Company, Textile Fibers Dept., Wilmington, Delaware.

BOOKLETS

raw stock to roving

T-101 Lummus Pepper-Shaker Opener. Gives complete details and photographs. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-102 Static Elimination. How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

T-103 Card Grinding Information. Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

T-104 Card Clothing. Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

T-105 Versa-Matic Drawing Frame. Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

T-106 Sargent Opener. Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-107 Feathertouch Drafting. How to get "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

T-108 Automatic Weighing Feeders. Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. James Hunter, Inc., 745 Loundes Hill Rd., Greenville, S. C.

T-109 Flexidyne Individual Card Drive. Describes operating principles, includes prices. Dodge Mfg. Corp., Mishawaka, Indiana.

T-110 Bobbins. Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fibre Co., Wilmington, Del.

T-111 Magnetic Ideas. Booklet shows uses of permanent magnetic separation equipment in opening room as well as throughout mill. Removes tramp iron, prevents fires. Eriez Mfg. Co., Erie, Pa.

T-112 Advantages of Aldrich Pickers. Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-113 New Condenser Tape. Describes Supr-O-Tape, an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-119 Fiber Meter. Automatic weighing and blending assures quality, holds variation to 1%. James Hunter, Inc., Greenville, S. C.

T-120 Pin Drafters. Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute systems for carpet yarns. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

T-121 Universal Card Coiler. Literature describes both head and base swivel for adjustment. Includes data on 90-day free trial. McDonough Power Equipment, Inc., McDonough, Ga.

T-122 Recondition Opening & Cleaning. Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-123 Coiler Conversions. Full facts on low initial cost conversion to larger coiler cans. Lists advantages, has complete description. Southern States Equipment Corp., Hampton, Ga.

T-124 Card Drive. Bulletin 301-a describes simple, safe, efficient individual card drive. Southern States Equipment Corp., Hampton, Ga.

T-127 Pneumastop for Fly Frames. Brochure explains, in terms of dollars and cents, the benefits of having Pneumastop-equipped roving frames in the mill. Illustrated to show its operation and several different types of installations. Pneumafil Corp., Charlotte 8, N. C.

T-128 Quick-Set Roving Frame. Integral machine for processing of worsted, synthetic or blended yarns. Whitin Machine Works, Whitinsville, Mass.

T-132 Proctor Super Picker. Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-133 Anti-Static Agent. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

yarn and warp making

T-201 Products For Spinning and Weaving. Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

T-202 New Bobbin Manual. Complete bobbin guide. Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

T-203 Spindle Oil. "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

T-205 High Speed Automatic Quiller. Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N C.

T-206 Whirlwind Twister Winder. Booklet is job report on how "Whirlwind" Twister Winder reduces cost, increases production at New Bedford Cordage Company. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

T-208 Packaged Spinning Modernization. Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

T-209 Sectional Warper. Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

T-210 Conical Rings and Flyers. Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

T-211 Precise Winding Machine. For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

T-212 Automatic Cleaning Equipment. Working details and advantages of the Tri-Rail Cleaner. American MonoRail Co., 13107 Athens Ave., Cleveland 7, Ohio.

T-216 Spinning Frame Conversions. Big-package, new-frame results at half the cost. Meadows Mfg. Co., Station A, Atlanta, Ga.

T-217 Collecto-Vac. New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

T-219 Spinning and Twister Rings. Complete details, pictures, price list. Whitinsville Spinning Ring Co., Whitinsville, Mass.

T-222 Suction Cleaning System. Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

T-223 Facts About Your Flyers and Spindles. Advantages of smooth flyer and spindle operation. Ideal Machine Shops, Bessemer City, N. C.

T-224 Traveling Cleaners. Describes improved frame and room cleaners. Parks-Cramer Co., Fitchburg, Mass.

T-225 Lapless Endless Spinner. Full information available. Ton-Tex Corporation, 31 Columbus Ave., Englewood, N. J.

T-226 Worsted Spinning. Describes five stages from top to yarn. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-227 Spindle Oiling Machine. Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

T-228 Handy Spinning Reference. Shows traveler speeds, sizes of ring flanges. Victor Ring Traveler Co., Providence, R. I. and Gastonia, N. C.

T-229 Unirail Uptwister. Higher yarn quality and better packages at faster speeds. Universal Winding Co., P. O. Box 1605, Providence, R. I.

T-230 Precision Textile Winding. Tensions and density control for winding rubber cones. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-231 Cone Winder. Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

(Continued on next page)

Handle all machinery in your mill with only 8 lubricants

Simplification like this typifies the money-saving ideas you get from a Texaco Lubrication Engineer

Do you have different specifications for every machine in your mill? Or special lubricants to solve every major problem? Then consider this: mill after mill has reduced the number of lubricants required to handle *all* their manufacturing departments to as few as 8 or 10. By using multi-purpose lubricants, they reduce errors, get better lubrication, even cut labor cost and certainly they need far less space for storage.

In the spinning room, for example, the non-drip characteristic of Texaco Stazon is important in top-roll lubrication. In the weave room, Stazon also keeps cloth clean because it won't splatter or creep. It also minimizes parts wear, assures longer bearing life, and lowers power consumption.

Another way to cut costs is to use Texspray fiber conditioner which cuts down fly and dust by as much as 95%. That means machines and men operate more efficiently, fibers are more pliable, staple is longer and static is reduced.

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BOOKLETS

T-232 Short Cut To Staple Fiber Spinning. Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

T-233 Weaver's Knotter. Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

T-234 Textile Roll Coverings. Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

T-236 Tape For Driving Spindles. Describes banding for spindle drives on twisting, roving and spinning. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-239 Large Package Twister. Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 4354, Atlanta, Ga.

T-241 Pacemaker Twisters. Folder gives details on high production, outlines notable features. Whitin Machine Works, Whitinsville, Mass.

T-242 Ring Spinning Frame. Folder presents description, illustrations and specifications of up-to-date Simplex ring spinning frames. Davis & Furber Machine Co., North Andover, Mass.

T-243 Anti-Friction Twister Bearings. Find out how bearings helped make The Meadows Twister almost friction-free. Fafnir Bearing Company, New Britain, Conn.

T-246 Better Beams. Information on three ways to make better beams. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-249 Vari-Speed Motor Pulley. Describes variable speed control through use of simplified three-major-part disc-assemblies with only one lubrication point. Reeves Pulley Co., Reliance Electric & Engineering Co., Columbus, Ind.

T-250 Spinning Modernization. Booklet shows how lower costs and improved quality are obtained by spinning modernization. Roberts Company, Sanford, N. C.

T-252 Frankl Textile Machinery. Details on foreign worsted machinery, narrow fabric looms, and finishing machinery. Ernest L. Frankl Assoc., 515 Madison Ave., New York 22, N. Y.

T-255 New Bobbin Holder. Details on streamlined, positive latching bobbin holder. Whitehead Die Casting Co., 1140 Zonolite Rd., Atlanta, Ga.

T-258 Dependable Beams. Free bulletins available on complete line of light metal, continuous welded construction beams. Milton Machine Works, Inc., Milton, Pa.

slashing—weaving—tufting

T-301 Counting And Measuring Devices. Wide range of counting devices for all types of textile machinery. Veeder-Root, Inc., Hartford, Conn.

T-302 Loom Supplies. Describes complete line. E. H. Jacobs Northern Division, The Bullard Clark Co., Danielson, Conn.

T-304 Loom Production Charts. Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

T-306 The Story Of Starches. History and information on manufacture and use of starches. National Starch Products, Inc., 750 Third Ave., New York 17, N. Y.

T-307 Loading System. Pneumatic loading system for Saco-Lowell slasher. The Foxboro Company, Foxboro, Mass.

T-308 Steel Warp Beams. Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

T-309 Penford Gums In Textiles. Describes their excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

T-310 Saco-Lowell Positrol Slasher. Includes advantages, photographs, cut-away drawings. Saco - Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

T-311 Rotary Unions. Cut costs, get better sealing on can dryers. Perfecting Service Company, 332 Atando Ave., Charlotte, N. C.

T-312 Air Slasher Dryer. Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-313 Butt-Tacking Sewing Machine. Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

T-314 Loom Reed Booklet. Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

T-315 Cocker Equipment. Information on warp sizer, beam warper, creels, tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

T-318 Formulas For Slashing Arnel. Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

T-319 Eclipse Starches For Textiles. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-321 Cocker Slashers. Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

T-322 Mounts For Looms. Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

T-323 Unifil Loom Winder. Describes new concept of filling preparation which needs no quilling area. Universal Winding Co., P. O. Box 1605, Providence, R. I.

T-324 Aligning Lays. Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

T-325 Traveling Loom Cleaner. Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

T-326 Draper Repair Parts Catalog. Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

T-327 Baling Presses. Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

T-328 Textile Machinery Parts Catalog. Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

T-329 Counting Devices. Describes complete line of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

T-331 Static Bars. Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

T-332 Care Of Draper Shuttles. Describes how longer, troublefree service may be obtained. Draper Corporation, Hopedale, Mass.

T-334 Largest Slasher Order in History. Folder tells why Springs Cotton Mills bought 25 multi-cylinder slashers. West Point Foundry & Machine Co., West Point, Ga.

T-336 One - Piece Sizing Agent. Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

T-339 Heliclone Loom Cleaner. Details on how it cuts costs, improves quality, reduces fire hazard. American Moistening Co., Cleveland, N. C.

T-342 Hydraulics in Slasher Drives. Describes characteristics of petroleum base and fire-resistant hydraulic fluids, how to select best fluid for a given job. Vickers, Inc., Box 302, Detroit 32, Michigan.

T-343 Laminated Carpet Covers. Complete information on Rol-Lap Carpet Covers with cemented seams. Bemis Bros. Bag Co., St. Louis 2, Missouri.

(Continued on next page)

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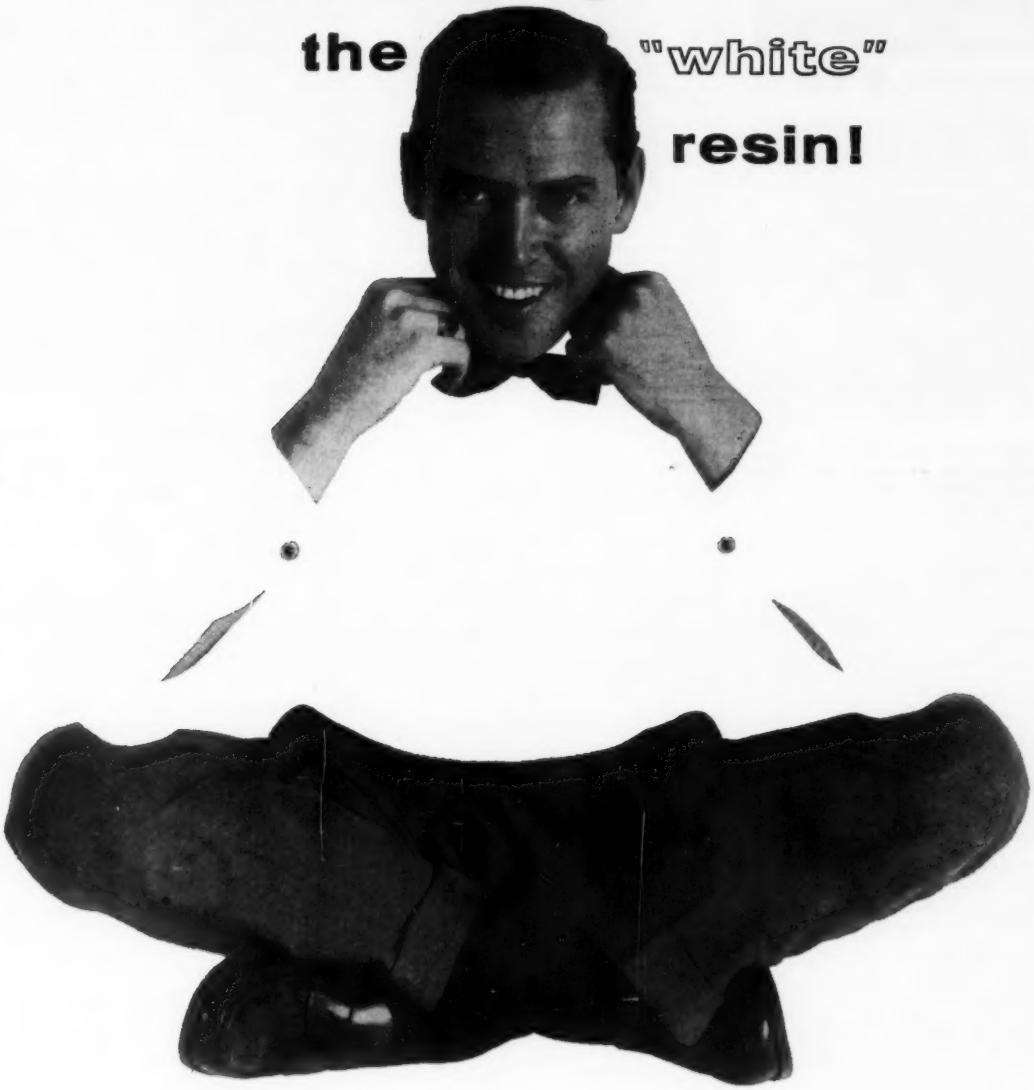

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BOOKLETS

T-346 Facts On Non-Wovens. Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

T-347 New Drying System. Describes high capacity, custom engineered drying equipment for tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

T-351 Automatic Stop Motion. Complete information available on automatic stop motion for Titan warp tying-in machine. Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

T-353 Backing for Tufteds How to get your tufting necessities with one telephone call. Fulton Cotton Mills, Atlanta, Ga.

T-355 Non-Woven Fabrics. Booklet gives outline of nature and history of non-woven and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-358 Loom Supplies. Information on rod lubricant and applicator, sponge leather bunter, picker. Garland Mfg. Co., 54 Water St., Saco, Me.

T-360 Supplies For Tufters. Information on yarns for rug tufting or chenille or carpet backing. Piedmont Cotton Mills, East Point, Ga.

T-361 Eclipse Starches for Textiles. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-362 Size That Satisfies. Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stodghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

T-363 Rubber Covered Slasher Rolls. Handy booklet tells how to get longer life and better performance from rubber covered rolls. Includes data on handling, storing and grinding. Stowe-Woodward, Inc., Dept. C., 181 Oak St., Newton Upper Falls 64, Mass

knitting

T-401 Singlehead Full - Fashioned Machine. Literature on request from the Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-403 Raschel Knitter. Describes new Raschel-type knitting machine. Kidde Textile Machinery Corp., Inc., Farrand St., Bloomfield, N. J.

T-406 Needle Oil Does Not Stain. Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., P. O. Box 1106, Pittsburgh 30, Pa.

T-407 Knitting Machines. Information on Wildman "TFS" 30" single section F-F machines and "AL" 32" diameter 32-feed "single purpose" circular interlock machine (rib type). Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-409 Knit Goods Finishing Machinery. Data on calenders, shrinkers, curers, extractors, steamers. Tubular Textile Machinery Corp., 33-61 54th St., Woodside, N. Y.

T-410 "Reading" Type 60 F-F Knitting Machine. Information about the new "Reading" Type 60, 38-section automatic full-fashioned hosiery knitting machine. Write Textile Machine Works, Reading, Pa.

wet processing

T-500 Cloth Guides. Bulletin 22.1 provides application diagrams and illustrations. GPE Controls, Inc., 240 E Ontario St., Chicago 11, Ill.

T-501 Tubes For Package Dyeing. Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

T-502 Finishing Machinery. Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

T-503 Water Analysis. Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-504 Urea Formaldehyde. Literature on urea formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-505 Acid Mordant Blue B. Details on Acid Alizarine Blue B for bright navy shades. Zinsser & Co., Inc., Hastings-on-Hudson 6, New New York.

T-506 Cationic Surface Active Agent. Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-507 Continuous Starch Cooker. Booklet shows how the use of continuous cookers for starch assures accurate control, economy, low maintenance in warp sizing and finishing. Clinton Corn Processing Company, Clinton, Iowa.

T-508 Peroxide Bleaching System. Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept., Wilmington, Del

T-510 Textile Chemicals. Describes leading products for wet processors. Royce Chemical Co., Carlton Hill, N. J.

T-511 Brine For Textile Industry. Describes Lixate process for making brine. International Salt Co., Inc., Scranton, Pa.

T-512 Depuma. Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., 2010 Clarke Bldg., Pittsburgh 19, Pa.

T-513 Catalyst AC-6. Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Springfield 2, Mass.

T-514 Soda Ash Bulletin. Contains useful data covering this subject. Solvay Sales Division Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-515 Kylan PC (Chitin). Brochure gives physical, chemical properties of Kylan PC, a commercially available chitin. Includes also reactions and methods of packaging. Moretex Chemical Products, Inc., Spartanburg, S. C.

T-516 Aluminum Chelate PEA-1. Technical data sheet tells how aluminum Chelta PEA-1 may be used with advantage in many applications where aluminum is proplate is unsatisfactory. Hershaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-517 Chemical Catalog. Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

T-519 Hydraulic Power Units. Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

T-522 Cut Water Treatment Costs. Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

T-526 Hycar Latices. Physical properties and typical fields of application. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, O.

T-527 Sodium Hydrosulfite. Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

T-528 Ethanolamines. Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-531 Rotary Dyeing Machine. For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

T-534 Dyeing and Finishing Machinery. Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

T-535 Dyeing, Bleaching and Drying Equipment. Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

T-536 Napthol Ratios Slide Chart. Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

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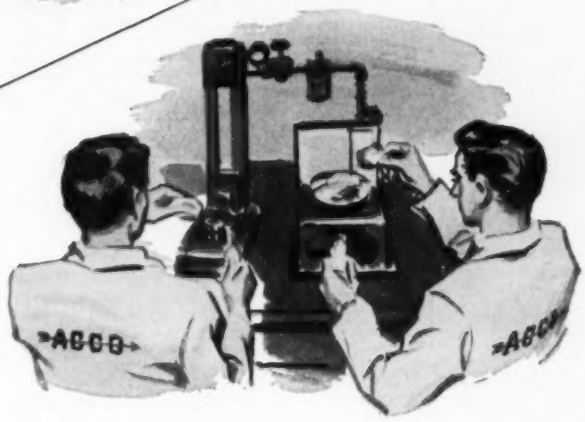

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BOOKLETS

T-537 "PCB" Rock Salt. Tells how product saves money, eliminates bad dyeing. Morton Salt Co, Industrial Division, 120 So. LaSalle St., Chicago 3, Ill.

T-540 Penford Finishing Gums. Complete data, including physical properties. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

T-541 Regeneration Of Zeolite Water Softeners. Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

T-542 Dyeing Synthetic Fibers. Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-543 Industrial Brushes. Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-544 Waste Heat Recovery Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

T-545 Washers For Scouring, Bleaching, Acidifying. Describes highcapacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-546 Naphthol for Lightfast Browns. Booklet describes new, straight, nonsubstantive naphthol, Naphthol As-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-547 Softener, Lubricant, Napping Aid. Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

T-548 Handbook on Methocel. Gives technical information and use data on family of methylecellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

T-549 Wall Charts For Handling, Testing H_2O_2. Two 16" x 21" wall charts available, one on handling and the other on testing H_2O_2. Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo 7, N. Y.

T-550 Polyvinyl Acetate Emulsion. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Corp. of America, Plastics Div., 744 Broad St., Newark 2, N. J.

T-554 Instrument Catalog. Complete information on industrial instrument accessories and supplies. Includes specifications, parts numbers and prices. Catalog 500, Foxboro Co., Foxboro, Mass.

T-555 Drying Tumblers. Details on fast, efficient open-end tumblers. Huebsch Manufacturing Co., 3775 N. Holton St., Milwaukee 1, Wisconsin.

T-556 Hunter Dyeing Equipment. Describes fully with diagrams Hunter Model A Dye Becks, Hunter No/Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. James Hunter Machine Co., North Adams, Mass.

T-557 High Activity Catalyst. Technical bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

T-558 Cationic Dye Leveler. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1425-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

T-559 Flow Control Complete information on largest selection of values to handle flow control requirements. William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-560 Profitable Curing. Complete story on profit-making loop curers and roller curers. Proctor & Schwartz, Inc., Seventh and Tabor Rd., Philadelphia 20, Pa.

T-561 Pump Pourable Pastes. Bulletin tells how Moyno pumps can pump any textile liquid that can be forced through a pipe, even if highly viscous or corrosive. Robbins & Myers, Inc., Springfield, Ohio.

T-563 Polyethylene Finishing Agent. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Semet-Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, Rector Street, New York 6, N. Y.

T-564 Hydrogen Peroxide Bleaching. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-566 Ethylex Gums. Brochure describes properties of hydroxy ethyl ether derivatives of corn starch. Applications of these noncongealing gums in warp sizing and finishing covered. A. E. Staley Mfg. Co., Box 151, Decatur, Ill.

T-570 Carpet Dryers. Details, pictures, drawings on driven roll, conveyor, and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston (Dorchester), Mass.

T-571 Chainless Mercerizing Machine. Two new bulletins provide complete information on the Benninger Chainless Mercerizing Machine for piece goods. H. W. Butterworth & Sons Co., Bethayres, Pa.

T-572 Dyeing Machinery for Every Purpose Illustrated literature available on complete line of automatically controlled machinery. Gaston County Dyeing Machine Co., Stanley, N. C.

T-573 Textile Finishing Machinery. Folder available from Marshall and Williams Corp. contains photographs of each piece of finishing equipment manufactured by the firm. Request from Marshall and William Corp., 46 Baker St., Providence, R. I.

T-575 Rotary Unions and Traps. Complete details on various types of rotary unions and steam traps, including specifications, operating pressures, etc. Perfecting Service Co., 332 Atando Ave., Charlotte, N. C.

T-576 Yarn Preparation. Describes products for yarn preparation, printing, finishing. Polymer Industries, Springdale, Conn.

T-577 Stainless Dry Cans. Information on stainless steel, 75 psi, reverse dished, head dry cans. Can be furnished Teflon-coated if desired. Sims Metal Works, West Point, Ga.

T-579 Automatic Guiding Equipment. Catalog shows various types of automatic guiding equipment for accurate cloth guiding. Fife Mfg. Co., Inc., P. O. Box 9815, Oklahoma City, Okla.

fibers and yarns

T-601 Fortisan-36, New Textile Fiber. Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

T-602 Caprolan Nylon Heavy Yarns. Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

T-603 Rayon—Mile By Mile. Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

T-604 The Chemstrand Nylon Story. Describes the birth and growth of Chemstrand Nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

T-605 Color-Fast Fibers. Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

T-606 "Dial-A-Fiber." Ingenious circular chart indicates properties and compatabilities of "Uvitex" for application on natural and synthetic fibers. Ciba Co., Inc., Technical Dept., 627 Greenwich St., New York 14, New York.

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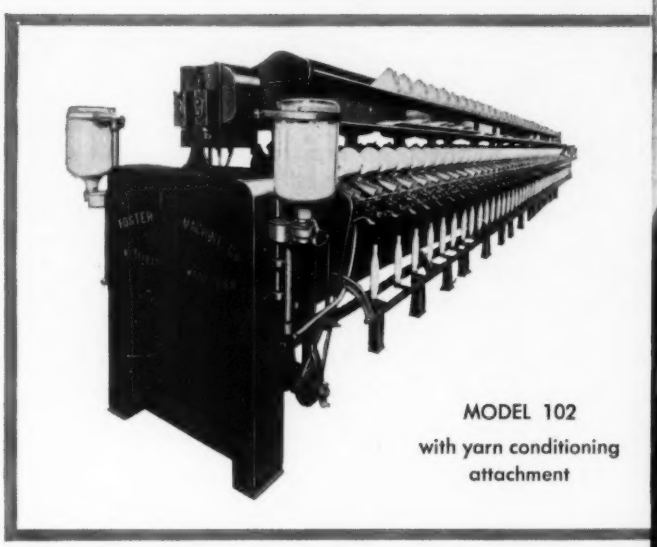
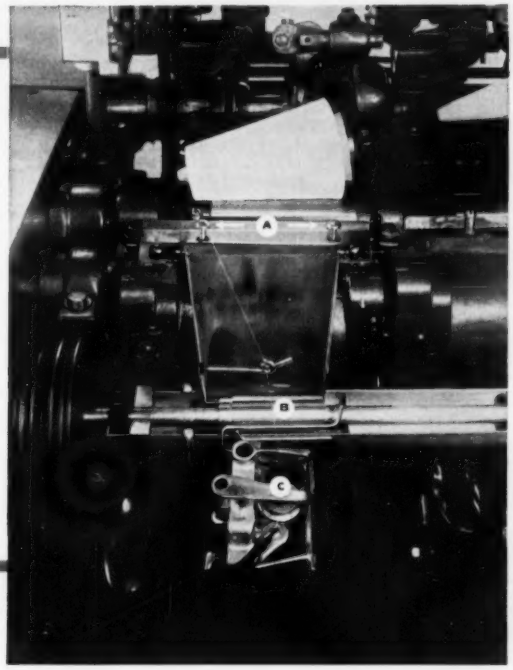
FOSTER MODEL 102

. . . For Backwinding Bulk, Stretch and Texturized Yarns



MODEL 102
with yarn conditioning attachment

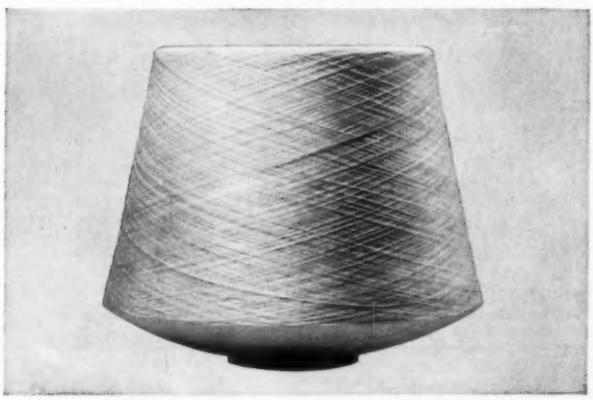


Mushroom buttons (A), moistening attachment (B) and tension attachment (C) on Model 102.

An Outstanding Example of This Machine's

FLEXIBILITY

For many years the Foster Model 102 has been widely accepted for the winding of all types and counts of spun yarns, because of its flexibility, or adaptability, including adjustable angle of wind and adjustable taper. Once again this reputation is confirmed by the machine's recent economical adaptation to the winding of bulk, stretch and texturized yarns.



142-9 Cone of Textralized® yarn wound on Model 102.

In addition to flexibility the Model 102 offers the following: —

QUALITY CONES. The increased taper reduces yarn drag and equalizes tension at all cone diameters. The convex base prevents "nipitis". Highly efficient slub catchers automatically inspect yarn. Ribbon breaker prevents ribbon wind. Idler shell on winding drum prevents chafing of yarn.

ECONOMY. Doubles production and reduces operating costs ⅓, as compared with obsolete machines, due to high speed, self threading tension device, easy donning and doffing and empty bobbin conveyor discharging into standard size truck. Repair costs as low as $10.00 per year per 100 spindles. Simple adjustments which any competent fixer can make.

Bulletin A-95-A on request

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Westfield, Massachusetts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. • Canadian Representative — Ross Whitehead & Co., Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario • European Representative Muschamp Textile Machinery (Sales) Limited, Elder Works, Wellington Road, Ashton Under Lyne, Lancashire, England.

BOOKLETS

T-607 The Story On Lurex. Information on metallic yarns made with Mylar and how they are developed to broaden the scope of the tufted industry. Textile Fibers Dept., The Dow Chemical Co., James River Div., Williamsburg, Va.

T-608 Taslan Textured Yarns. Technical information on dyeing and finishing of new fabrics made with Taslan. E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.

T-609 Processing Nylon Staple. Data sheet describes method of processing Du Pont 420 Nylon Staple in blends with cotton. Covers complete operation through sizing. Bulletin N-93, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

T-611 Candlewick Tufting Yarns. In cotton, rayon, nylon and blends . . . a "put up" for every need. Candlewick Yarn Co., Dalton, Ga.

laboratory

T-701 Testing Instruments. Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearny, N. J.

T-702—Metal Detector. Spot troublesome metal before it harms equipment or fabrics. Radio Corp. of America, Dept. S-271, Building 15-1, Camden, N. J.

T-703 Shadograph Weighing Devices. Pictures and information on various types of scales. Exact Weight Scale Co., Columbus 8, Ohio.

T-704 Pilling Tester. Booklet contains technical information on random tumble pilling tester. Includes features, advantages, recommended uses and gives detailed reports on preparing various materials for testing. E. I. DuPont, De Nemours & Company, Textile Fibers Dept., Wilmington, Delaware.

T-705 Strobotac. Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

T-706 Yarn Count Scale. Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn number. Exact Weight Scale Co., Columbus 8, Ohio.

T-712 Automatic Moisture Control. Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics. Hunter Controls, Inc., Div., James Hunter Machine Co., North Adams, Mass.

services for management

T-801 Factoring Service. Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

T-802—Non-Woven Fabrics. Report includes how non-woven fabrics are made, machinery involved, sample fabrics. Textile Fibers Dept., E. I. du Pont re Nemours & Co., Inc., Wilmington 98, Del.

T-805 Profit Through Factoring. Brochure gives facts on the use of factoring as a modern plan for developing sound business growth and added profits. Walter E. Heller & Co., Dept. TI-2, 105 W. Adams St., Chicago 99, Ill.

T-807 Group Insurance. Information on how textile group insurance can insure the happiness of your employees and make for a better running mill. Provident Life and Accident Insurance Co., Group Dept., Chattanooga, Tenn.

T-808 Factoring. Complete details on services offered as mill factors. L. F. Dommerich, 271 Madison Ave., New York, N. Y.

T-809 Move Key Men Quickly. Industrial airplanes help keep your key men from being stuck on one job at a time. Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-810 The Wonalancet Way is the title of an editorial booklet published five times a year dealing with current problems. Write Wonalancet Company, 128 Burke St., Nashua, N. H.

T-812 Beechcrafts at Work. Booklet available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time ond money. Write Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-818 Textile Engineering. Information on complete, integrated service covering every type of textile project. Robert & Co. Assoc., 96 Poplar St., N. W., Atlanta 3, Ga.

T-819 Organized Lubrication Pays. Planning book entitled "Management Practices that Control Costs via Organized Lubrication" shows how to effect savings in five areas of plant operation. Available from The Texas Co., 135 E. 42nd St., New York 17, N. Y.

T-821 Inventory Control. How a daily report of inventory condition mechanically produced on existing business machines showed a net direct payroll saving of more than $10,000 a year. Administrative Methods Dept., Werner Textile Consultants, 1430 Broadway, New York, N. Y.

plant operation

T-902 Belt Lacing Equipment. Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

T-903 "Motor Selector." How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

T-904 Gearmotors, Motogears, and Fluid Drives. Catalog supplies complete information on double, triple, and quadruple reduction gearmotors and motogears. Electrofluid and fluid drives are also explained. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

T-905 Rotary Pressure Joints. Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

T-907 Wrap Up Lint Problems. Automatic lint filter removes lint from air, winds it into disposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

T-908 Textile Motors. Bulletin describes complete line of textile motors. Diehl Mfg. Co., Finderne Plant, Somerville, N. J.

T-909 Compressors. WB two-stage water-cooled. Space-saving units require modest foundation up to 125 psi and 1150 cfm displacement. Bulletin WB-10. Gardner-Denver Company, Quincy, Illinois.

T-910 Modern Lubrication Methods. A report to management tells how modern lubrication methods can help save thousands of dollars in three major economic areas of textile plant management. Describes twelve operating advantages of automatic lubrication systems. Lincoln Engineering Co., 4010 Goodfellow Blvd., St Louis 20, Mo.

T-911 Leather Belting. Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

T-912 Story of Nylon Bristle. Tells of discovery and production, with special attention to "Tynex," a form of nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-913 "One-Shot" Lubricators. Bulletin describes wide field of application for one-shot lubricators on machines requiring closely controlled but infrequent oil feed. Bijur Lubricating Corporation, Rochelle Park, N. J.

T-914 Industrial Greases. Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

T-917 Blowers And Exhausters. Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

T-918 Paint Stripping Booklet. Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

(Continued on next page)

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BOOKLETS

T-921 Catalog Of Needle Bearings. Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

T-924 Ball Bearings For Textile Machinery. Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

T-925 Lubrication Of Bearings. Helpful list of do's and don't to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

T-928 Controls For Heating, Air-Conditioning. Catalog describes and illustrates line of automatic controls for heating, ventilating and air-conditioning control systems. Barber-Colman Co., Rockford, Ill.

T-929 New Air Conditioners. Bulletin describes new line of AAF-Herman Nelson Air Conditioning Units, featuring the Roll-O-Vent automatic air filter. American Air Filter Co., Inc., Louisville 8, Ky.

T-930 Dry Fluid Drive. Booklet describes how Flexidyne offers a new approach to difficult drive problems through the use of steel shot as a "liquid." Dodge Mfg. Corp., 1000 Union St., Mishawaka, Ind.

T-931 New V-Belt Drives. Bulletin contains information on selection and operation of V-belt drives. Covers all types of V-belt drives. Dodge Mfg. Corp., Mishawaka, Ind.

T-932 Smooth Acceleration, Deceleration. Describes eddy - current equipment for smooth, stepless acceleration and deceleration. Eaton Mfg. Co., 3307 14th Ave., Kenosha, Wis.

T-933 Catechism Of Electric Machinery. Booklet contains complete technical treatise on various electrical machines. Electrical terms defined. Fairbanks, Morse & Co., Fairbanks-Morse Bldg., Chicago 5, Illinois.

T-937 V-belts. Tells how raw materials and finished belts are tested and inspected. Quality control and experimental production covered. Booklet 5-51107, Dept. 794, Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-939 Lubricant Pumps. Catalog features new line of air-motor operated lubricant pumps. Covers design and engineering features, lubricant-output-performance and selection charts. Catalog No. 65, Lincoln Engineering Co., 5702-15 Natural Bridge Ave., St. Louis 20, Missouri.

T-942 Central Station Air Conditioning. Booklet describes controlled ventilation, air circulation, air washing, humidifying, evaporative cooling which are available through central station air conditioning. Parks-Cramer Co., Fitchburg, Mass.

T-948 New Lubricated Plug Valves. Semi-steel and steel lubricated plug line. The William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-949 Casters and Wheels. Manual contains descriptive material and application data for various casters and wheels. Darnell Corp., Limited, 1200 Woodruff Avenue, Downey, Calif.

T-950 Air Conditioning Control. Air conditioning control cabinets are described, with tables, curves, and sketches, dimensions, physical data, performance, and coil ratings, etc. Buffalo Forge Company, 490 Broadway, Buffalo, N. Y.

T-951 Organized Plant Lubrication. This subject, including how to go about it, is discussed at length in the July, 1958, issue of "Lubrication," a Texaco publication. Reprints of that issue are available from The Texas Co., 135 E. 42nd St., New York 17, N. Y.

T-952 Speed Reducer. Folder describes "Universal Worm Gear Speed Reducer" which is built to operate in three positions and has a higher capacity with external fins for cooling. Link-Belt Company, Prulential Plaza, Chicago 1, Ill.

T-953 Enduro Stainless Steel. Brochure describes various types of Enduro Stainless Steel, including properties, fabricating, joining, and care and finishing. Republic Steel Corporation, Republic Building, Cleveland 1, Ohio.

T-954 Motor Selection. Bulletin gives concise data on selection to users of A-C motors from one through 200 hp. Pictures, ratings, dimensions, etc, included. Reliance Electric and Engineering Co. 24701 Euclid Ave., Cleveland 17, Ohio.

T-956 Penetrating Wood Finish. Describes floor seals for textiles. E. I. du Pont de Nemours & Co., Inc., Finishes Div., Wilmington, Del.

T-957 Pipe Threading Tools. Capacities and weights included along with pictures. Ridge Tool Co., Elyria, Ohio.

T-958 Stainless Steel Fabrication. Information on ventilating and drying, slasher exhaust, and materials handling in stainless. Sims Metal Works, West Point, Ga.

T-960 Waste Treatment. Booklet describes "Dowpac" application in waste treatment. Contains properties, assembly, application in oxidation towers and performance data. Dow Chemical Co., Midland, Mich.

T-962 Industrial Floor Finishes. 16-page book contains specifications and descriptions of industrial floor finishes for textile use. Includes directions for application. Minnesota Paints, Inc., 1101 Third Street, South, Minneapolis, Minn.

T-963 Humidification by Graduvac. Bulletin gives details on gravity type atomizer control system and tells how supply of water to atomizers is automatically regulated. Parks-Cramer Co., Fitchburg, Mass.

T-967 Tailor-Made Gears. Information on textile and industrial gears for every purpose from iron, steel, bronze, rawhide, Bakelite, and made to specification. Ferguson Gear Co., Gastonia, N. C.

T-969 Multifak Lubrication. How you can simplify lubrication in your mill by using Multifak, the low cost multiple purpose textile lubricant. The Texas Co., 135 E. 42nd St., New York 17, N. Y.

T-970 Johnson Rotary Pressure Joints. Bulletin describing the rotary pressure joint which requires no packing, no lubrication, and no adjustment. Gives installation and maintenance instructions, types, sizes, dimensions, and prices. Request from The Johnson Corp., Three Rivers, Michigan.

materials handling and shipping

T-1005 Tramrail Engineering And Application. Data on how Tramrail equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

T-1007 Materials Handling For Textiles. Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

T-1008 Stresses on Overhead Tracks. Covers track peening, discusses stresses. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

T-1012 Improved Materials Handling. "Materials in Motion" describes use of fibre containers. National Vulcanized Fibre Co., Wilmington, Del.

T-1013 Trucks Doff, Store, Become Spooler Tray. Brochure tells how mobile boxes are being used as doff boxes, storage boxes, and spooler trays on Barber-Colman spooler. Fisher Mfg. Co., Hartwell, Ga.

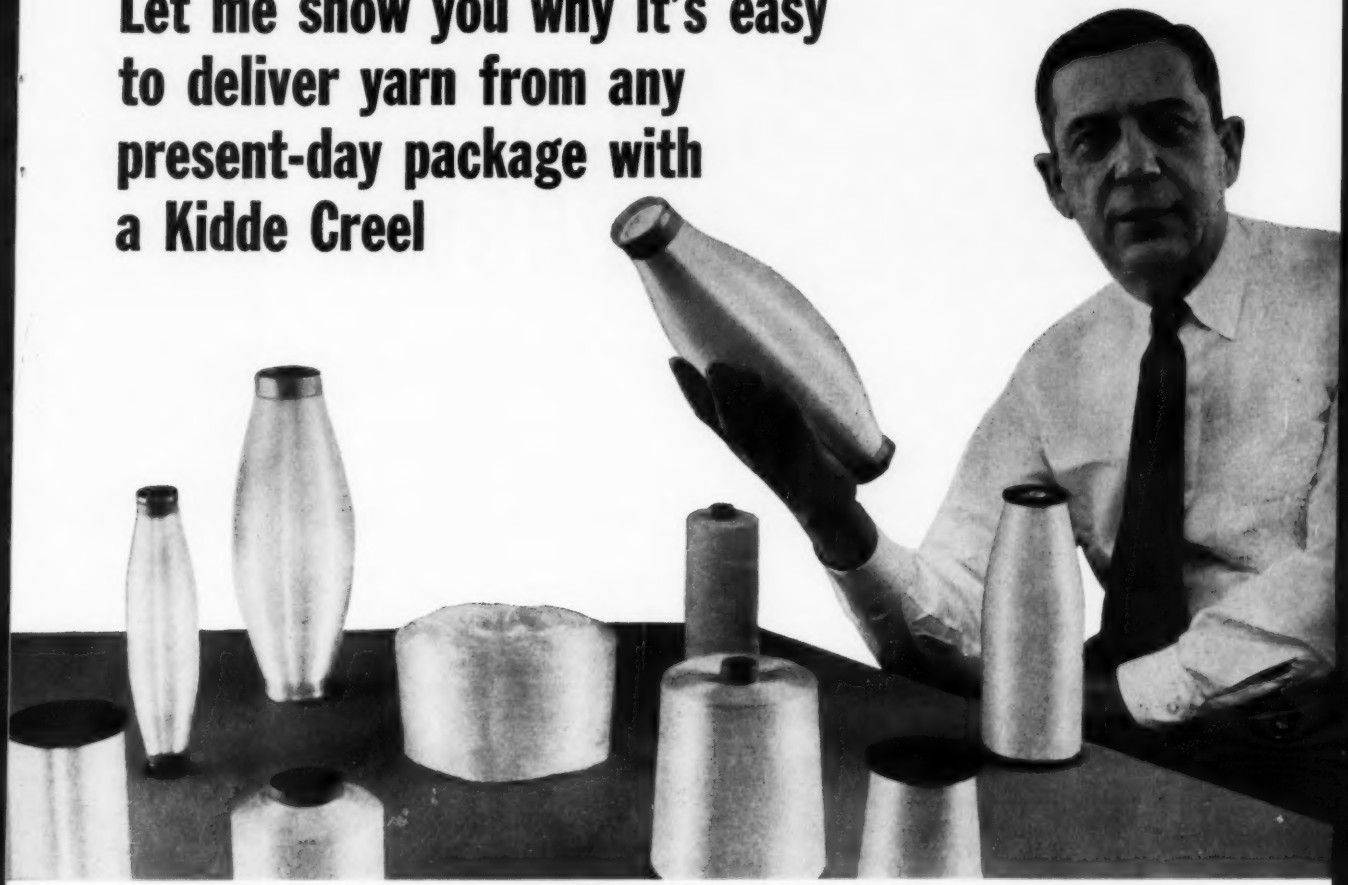
T-1014 Carpet Cores, Storage Tubes. Literature on simplified storage and better cores for rugs. Sonoco Products Co., Hartsville, S. C.

T-1015 Overhead Conveyor. Catalog features "Cable-Way" Overhead Conveyor which has low-cost, ease of installation, quiet operation and long life. Conveyor Division, The American MonoRail Co., Fourth and Franklin Sts., Tipp City, Ohio.

T-1016 Guide To Better Closures. For use as a guide for the evaluation of methods currently in use to effect economy and better production in the closure of fiber board boxes. Acme Steel Products Div., Acme Steel Co., 135th and Perry Ave., Chicago, Ill.

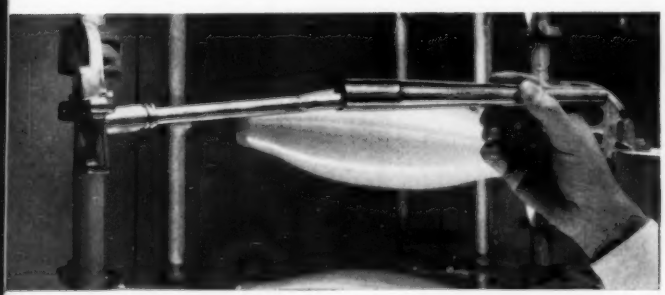
T-1020 Automatic Wrapping. Tells how automatic packaging increases the sales appeal of textile products. Saves labor and materials and adds tamper - proof product protection. Write Hayssen Mfg. Co., Sheboygan, Wis.

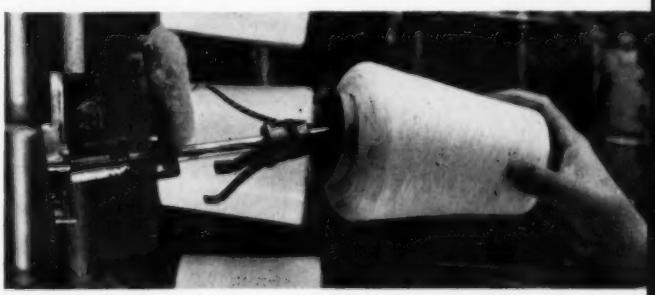
Let me show you why it's easy to deliver yarn from any present-day package with a Kidde Creel



You need only a basic holder and adapters to handle any yarn packages on the Kidde creel. You can see in the picture at bottom left, for example, how easily the basic pirn pin can be equipped with adapters to handle any pirn of textile yarn made today. The snap-on holder shown next to it accommodates any taper cone, as well as a range of straight packages. What's more, we'll design holders and adapters for future packages to accommodate them on the present Kidde creel.

Of course, this is only one Kidde feature. We could describe our tension devices and the uniquely simple Kidde stop-motion. We could explain how Kidde makes a creel to your specifications and how easily you can adjust its clamp-type construction to fit your changing needs. But we have a booklet that does all this. We'll be glad to send you one. Just write or phone.





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3. In addition, dyers and finishers regularly send in samples of fabrics from their various dyelots, and these are also tested in order to make sure that the original quality is maintained in succeeding batches.
4. Arnel tags provide to the consumer all important information concerning the fabric as well as its care. Service qualities *must* be verified.

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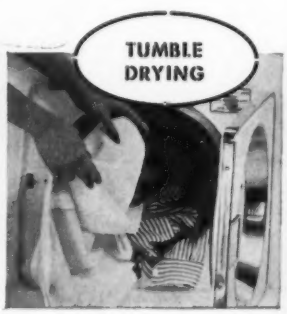
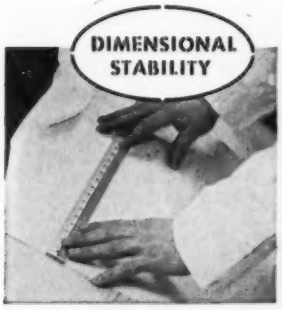
Export Sales: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Ave., New York 16, N. Y.
In Canada: Chemcell Fibres Limited, 1600 Dorchester Street West, Montreal, Quebec



Arnel . . . a



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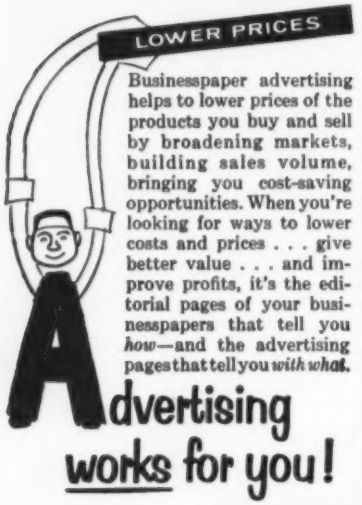
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PERSONAL NOTES

(from page 51)

Recently named vice-president and general manager of The Linen Thread Co., Inc., was **D. L. Malcom, Jr.** Appointed controller of the new Indian Head Mills Co., Inc., subsidiary was **Walter J. Marr.** Both of these officials are located at the Blue Mountain, Ala., plant where production and administrative facilities of the company are now located. **R. C. Moyer** continues as plant manager of the Blue Mountain mill.

The Lockhart, S. C., plant of Monarch Mills has named **Charles Mount, Jr.,** personnel manager and director of training.

Preston Bailey has assumed his duties as industrial engineer at Monroe Mills, Monroeville, Ala. He will direct the firm's new program designed to expand the scope of industrial engineering.

The National Cotton Council has appointed **Nelson Getchell** manager of the technical section, utilization research division, in Washington, D. C.

Textile Research Institute elected the following corporate officers at a recent meeting: chairman of the board, **William E. Clark,** vice-president and general manager, textile division, United States Rubber Co.; vice-chairman, **Russell W. Peterson,** director of textile and industrial products research division, E. I. du Pont de Nemours & Co., Inc.; and chairman of the finance committee, **Bruce B. Allen,** technical director textile division, Celanese Corp. of America.

At the recent meeting of the Textile Operating Executives of Georgia, **J. Henry Walker,** superintendent of Mill No. 1 of Dundee Mills, Inc., Griffin, Ga., was elected to serve a 2½ year term of office on the executive committee. Mr. Walker replaced Otis B. Alston, superintendent of Swift Spinning Mills, Columbus, Ga., whose term had expired.

William H. Barnhardt, president of Bardhardt Brothers and Barnhardt Elastic Corp., Charlotte, is the new president of the North Carolina Textile Foundation. Other officers chosen at the recent annual meeting are: **Halbert Jones,** Waverly Mills, Laurinburg, vice-president; **Jesse White,** J. P. Stevens & Co., Greensboro, secretary, and **Alex Shuford,** Shuford Mills, Hickory, treasurer.

Tom R. Williams has resigned his position as director of methods and standards of Riegel Textile Corp. to accept a position as senior associate with Bruce Payne & Associates, Inc. He will continue to make his home in Greenville, S. C.

Standard Knitting Mills, Inc., has named **James E. Gettys** a vice-president and assistant general manager, and **Earnest B. Rodgers** has been designated a vice-president. These are new positions in the company.

Members of the board of Cannon Mills Co. have elected **Charles A. Cannon** to the newly-created post of

Officers elected at the recent meeting of the Southern Textile Methods & Standards Association are (l to r): president, CHARLES LAND, Woodside Mills; vice-president, TOM WILLIAMS, Bruce Payne & Associates, Inc.; treasurer, GEORGE FUNDERBURK, U. S. Rubber Co.; executive secretary, HOWARD L. LOVELESS, University of Tennessee.

chairman of the board. **William C. Cannon,** while retaining the office of a vice-president, has been named assistant chairman. **Don S. Holt** has become executive vice-president. **George A. Batte, Jr.,** and **Fred L. Wilson** have been designated vice-presidents, retaining the duties of assistant treasurer and general manager, respectively. Elected assistant vice-presidents were: **Hester Warren,** general superintendent of carding, spinning, and maintenance; **Elmer Spence,** general superintendent of weaving and finishing; **Joseph C. Ridenhour,** assistant secretary; **Brandon Payne,** assistant production manager; and **Raiford Miller.** Mr. Miller is assigned to the plant office in Concord, N. C., and Messrs. Ridenhour and Payne are on the staff at the home office in Kannapolis, N. C.

Carlton Yarn Mills, Inc., Cherryville, N. C., has named **Thomas W. Borland** president and treasurer, succeeding the late Ben R. Rudisill. Elected vice-president was **Edward H. Largen.** He will also serve as assistant to the president in the post formerly held by Jack H. Scott, who died in the same plane crash that claimed Mr. Rudisill's life.

Alfred A. Forster has announced his impending retirement from Clifton Yarn Mills, Inc., Clifton Heights, Pa. Mr. Forster has been with the firm for 33 years, serving most recently as board chairman and general manager.

E. C. Gwaltney of Russell Mfg. Co., Alexander City, Ala., was elected president of the Alabama Textile Education Foundation at the organization's annual meeting in Biloxi, Miss. Other officers elected at the meeting were: vice-president, **T. H. Floyd,** Opelika (Ala.) Manufacturing Corp.; secretary, **Dwight Wilhelm,** Alabama Textile Manufacturers Association, Montgomery, Ala.; and treasurer, **Homer Carter,** Pepperell (Ala.) Manufacturing Co.

B. I. Cotton Mills division of Burlington Industries, Inc., has named **Rayford Perdue** superintendent of the Cherokee Falls (S. C.) Mill. * * * **James D. Barbee** has become president of Cramerton (N. C.) Mills and **J. Roderick Miekle** has been made a vice-president.

Cleon Moon has been promoted to superintendent of the Simpsonville, S. C., plant of Woodside Mills; **George Christian** to spinning room overseer. At the Easley, S. C., plant,

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Today's competitive textile market makes fast, efficient materials handling a *must* and production efficiency demands a constant flow of materials and maximum use of all available space. R-W "Zig-Zag" Conveyors effectively meet these demands by keeping things moving on the production line and utilizing, to full extent, valuable overhead space. R-W "Zig-Zag" Conveyors are extremely flexible ... easily move up, down, in, out and around ... carry unit loads up to 125 lbs. at speeds from one inch to 100 feet per minute. "Zig-Zag" systems may be easily altered, expanded or relocated by plant personnel.

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STAFF PHOTO

Newly-elected officers of the Textile Quality Control Association are (l to r): president, LANE C. DRYE, Linn-Corriher Mills; vice-president, WILLIAM ESSLINGER, M. Lowenstein & Sons, Inc.; secretary-treasurer, ROBERT MIRALDI, National Cotton Council; and assistant secretary-treasurer, WERNER PELS, National Cotton Council.

Woodrow Eskew has been named overseer of spinning. **Bennett Hudson** has assumed the duties of assistant superintendent of the Liberty, S. C., plant. **Paul Addington** has been appointed shift overseer, spinning, at the Greenville, S. C., unit.

George H. Dobbie of Galt, Ont., has been elected chairman of the Primary Textiles Institute, succeeding **H. Roy Crabtree** of Montreal. Other officers elected were: **G. L. Bruck** of Bruck Mills, Ltd., as vice-chairman, and **G. B. Gordon,** president of Dominion Textile Co., Ltd., Montreal, as honorary secretary-treasurer.

Henry E. Lollis has assumed his duties as plant engineer at the Proximity Print Works plant of Cone Mills Corp., Greensboro, N. C. * * * **James A. Jarrett** has been promoted to overseer of third shift spinning, spooling, winding, and quilling at the White Oak plant in Greensboro. **Melvin Whitt** has been moved to assistant overseer, first shift, south end warp carding; and **Wilbert Hawks** has been transferred to assistant overseer, third shift, filling carding. **Charles Smith** is now assistant overseer third shift, south end warp carding. **Milton Gibson** has been promoted to an assistant overseer of the second shift, north end carding. **Luther D. Moore** succeeds Mr. Gibson as foreman-overhauler, first shift.

The board of directors of Everlastik, Inc., Chelsea, Mass., has elected **David Casty** president. **Ben Fanuel** succeeded Mr. Casty in his position as treasurer. Elected to newly-created positions were: **Spencer Glanz,** vice-president in charge of

Officers to serve for the coming year were named at the recent annual convention of the Alabama Textile Manufacturers Association in Biloxi Miss. They are (standing, left to right): vice-president, DONALD COMER, JR., Avondale Mills, Birmingham, Ala.; treasurer, SIDNEY W. TINGEN, West Boylston Manufacturing Co., Montgomery, Ala.; executive vice-president, DWIGHT M. WILHELM, Montgomery, Ala.; (seated, left to right): secretary, SARA DAVENPORT, Montgomery, Ala.; president, JOEL E. JOHNSON, Geneva-Bama Cotton Mills Geneva Ala.; and retiring president who becomes chairman of the board, E. R. LEHMANN, West Point Manufacturing Co.

sales; **William C. Classe,** executive vice-president; and **Henry E. Ferron,** vice-president in charge of manufacturing.

James L. McCormick has succeeded the late Ralph M. Holt, Sr., as president of Holt Hosiery Mills, Inc., Burlington, N. C. He continues as vice-president of Holt Hosiery Corp. **Ralph Holt, Jr.,** becomes treasurer of both firms, retaining, as well, the duties of vice-president of Holt Hosiery Mills.

Howard Wilkerson has assumed his duties as superintendent at Hyde Park Mills, Inc., Covington, Tenn.

OBITUARIES

George G. Armstrong, Jr., professor of design and weaving, Lowell Technological Institute, Lowell, Mass.

William Young Ball, 59, superintendent of Tolar Hart Mill, Fayetteville, N. C.

H. H. Carlson, 26, technical representative for Universal Winding Co., Anderson, S. C.

Fenn Hale Clark, 79, retired dye house superintendent of Melrose Hosiery Mills, High Point, N. C.

Ben F. Gessner, 69, retired superintendent Bear Brand Hosiery Co., Kankakee, Ill.

John Gilroy, Jr., 58, sales representative for Kali Chemical Co., Philadelphia, Pa.

Louis Ginsberg, 65, president of Interstate Yarn Mills, North Bergen, N. J.

Dorus Hammonds, 59, retired president of Hendor Mills, Ridgewood, N. J.

William F. Hill, district manager of Shawinigan Resins Corp., Atlanta, Ga.

Clive E. Hockmeyer, 66, president of Vertipile, Inc., Lowell, Mass.

William P. Johnson, 83, retired cotton buyer for Callaway Mills Co., Atlanta, Ga.

Theodore Kimmel Leininger, 71, manager of Leininger Knitting Mills, Inc., Pottsville, Pa.

Louis Liever, 75, retired president of Germantown Hosiery Co., Inc., Philadelphia, Pa.

William P. MacDougall, 78, retired president and chairman of Belding-Corticelli, Ltd., Montreal, Canada.

Paul Weeks Litchfield, honorary board chairman of Goodyear Tire & Rubber Co., Litchfield Park, Ariz.

Albert Nix, 70, prominent textile executive, Athens, Ga.

Guy I. Parmenter, retired superintendent of Goodyear Tire & Rubber Co.'s Clearwater Mills, Cartersville, Ga.

Charles L. Pillsbury, 86, retired executive of Munsingwear, Inc., Minneapolis, Minn.

Eugene Platzner, 64, retired mill owner, Cleveland, Ohio.

James Wesley Rearden, 97, continuously employed by Graniteville Co. for nearly 87 years, Graniteville, S. C.

Phillip Rosch, 59, superintendent of Somerville Manufacturing Co., Somerville, Conn.

Samuel Schulhof, 86, founder of former S. Schulhof Knitting Mills, Milwaukee, Wisc.

George W. Stowe, 73, president of Crescent Spinning Co., Belmont, N. C.

Louis Strauss, 67, president of La Salle Knitting Mills, Brooklyn, N. Y.

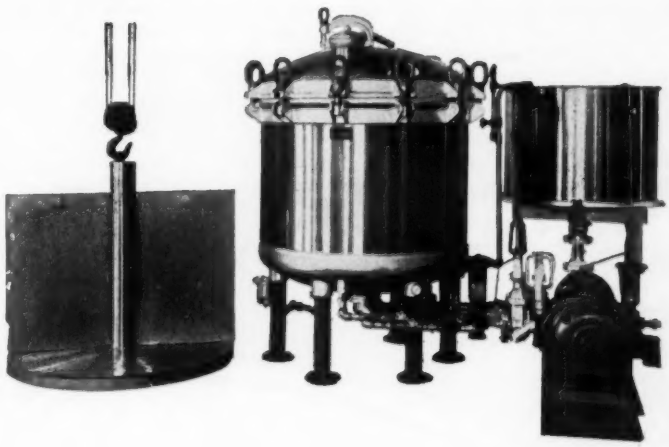
Gordon H. True, 41, assistant superintendent of Bonafide Mills, Lisbon, Me.

W. T. "Billie" Wynn, 68, former president of National Cotton Council, Hot Springs, Ark.

RAW STOCK MACHINES

for

Natural and Synthetic Fibers



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To Handle Carriers

(as illustrated)

Or Conventional Loading Racks With

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Capacities—From 1 To 1500 Lbs.

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Stanley North Carolina

Gaston County Dyeing Machine Co.
Terminal Bldg., 68 Hudson St.
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The Rudel Machinery Co., Ltd.
614 St. James St. W., Montreal
260 Fleet St. E., Toronto

A. R. Breen, 80 E. Jackson Blvd., Chicago, Ill.
J. R. Angel, 1104 Mortgage Guarantee Bldg., Atlanta, Ga.

MILL NOTES

Amity Dyeing & Finishing Co. has acquired the former U. S. Finishing Co. plant in Norwich, Conn., and has added printing to its regular line of services. Operations will be consolidated at the Norwich location; however, the firm will keep the plant in Glendale, N. Y., open through June 30, so that there will be no interruption in customer service.

Belmont (N. C.) Throwing Corp. is nearing completion of a $400,000 modernization program that will add 40 per cent to the firm's productive capacity. The program included installation and replacement of auxiliary machinery and completely air conditioning the plant.

Rose Ribbon and Carbon Manufacturing Co., Harrison, N. J., has been acquired by **Bemis Bro. Bag Co.** and is being operated as a wholly-owned subsidiary. No change in management personnel or operating policies will result from the affiliation.

Installation of more modern looms and air conditioning in the spinning and carding departments are among the improvements being effected at the Central, S. C., plant of **Cannon Mills Co.** Heretofore, only the weave room was air conditioned.

Commission Knitting Mills, Long Island City, N. Y., has set up a department for the brushing of wool and mohair sweaters and the napping and shearing of interlock sweater strips made from synthetic fibers.

A new firm, **Concord (N. C.) Hosiery Co., Inc.,** has started production of seamless hosiery. Equipment includes 24 knitting machines and six looping machines. Approximately 15 persons are employed.

Some 50 mill officials and department heads at **Spindale (N. C.) Mills, Inc.,** have completed extension courses in industrial psychology. Entitled "Human Relations in an Industrial Setting," the courses were arranged by Gardner-Webb College and mill officials.

New weaving machines have been installed in the **Bay Path Textiles, Inc.,** plant, Ware, Mass., where expansion activities were recently completed. The spinning mill has been transformed into a vertical wool cloth operation.

The P. H. Hanes Knitting Co., Winston-Salem, N. C., in collaboration with Blue Bell, Inc., of Greensboro, has again sponsored a world championship rodeo at memorial coliseum in Winston-Salem. Net profits of the enterprise go to three councils of the Boy Scouts of America.

The Easley, S. C., plant of **Woodside Mills** recently completed 2,000,000 man-hours without a lost-time accident. Although the Easley plant has twice reached 1,000,000 accident-free hours, this is the first time it has achieved the 2,000,000 mark. Both the Greenville and Liberty, S. C., plants have topped the 2,000,000 figure. A huge family outing will be held in celebration of the fine safety record later in the year.

A corporate charter has been issued to **J. & S. Hosiery Mills, Inc.,** Hickory, N. C. Principals are Claude R. Setzer, Ralph Johnson, and Geter P. Johnson.

All mill operations of **Juno Knitting Mills,** Brooklyn, N. Y., have been consolidated at 783 Manhattan Ave. The new quarters contain 20,000 sq ft, which is approximately twice the combined space of the four buildings previously occupied. Pro-

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The Rotary Union's patented construction, with its optically flat mechanical seal, automatically adjusts to pressure ranges . . . eliminates mechanical maintenance and adjustments. Gives smooth sealing and unmatched service on all types of rotating heating or cooling equipment. Ball bearings reduce wear and power consumption.

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- Self-Adjusting
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*Trade Name Patented

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Baltimore—Buffalo—Camden, N. J.—Chicago—Cleveland—Los Angeles
New York—Providence—Hamilton, Ont.—Montreal—Toronto

duction capacity has been upped to 1,000 dozens a week.

Major steps toward consolidation of elastic goods production in Seneca, S. C., have been completed by **Kendall Co.** The firm has already closed plants in South Bend, Ind., and Rockford, Ill., and elastic goods operations in the Chicago, Ill., plant will be concluded in the immediate future.

Expansion programs, estimated to cost $250,000 each, have been launched at **Valley Mills, Inc.,** Siluria, Ala., and that firm's recently-acquired facility, **Starkville (Miss.) Mills, Inc.** Plans include the addition of 30,000 sq ft of floor space at Valley Mills, as well as the modernization of a general warehouse which will be used for cotton storage.

Bonded Knit, Inc., is the name which William G. Leininger Knitting Co. has given to the recently acquired Wyomissing Hosiery Mills, Mohnton, Pa. Men's and ladies' hosiery is produced at the plant which is equipped with 123 knitting machines.

Murgola Knitting Mills, Inc., is the new firm name of the former **Mur-Lon Knitting Mills, Inc.,** located in Richmond Hill, N. Y.

Merger of **North Star Woolen Mill Co.,** Sanford, Me., with **Maine Spinning Co., Inc.,** Skowhegan, Me., has been announced, the surviving corporation to be known as **N. E. Spinning Co.** The North Star mill will continue to operate in Sanford, Me., with Arthur McEwen, a director, as general manager.

More than 8,000 sq ft of space have been added to **Sanda Hosiery Mills,** Cleveland, Tenn., as the initial step in a recently-instituted expansion and improvement program.

A new firm, incorporated in Delaware, has been formed by **Reeves Brothers, Inc.,** and The Electric Storage Battery Co. Known as **ESB-Reeves Corp.,** the company will be concerned with the development of porous and microporous plastic materials suitable for wearing apparel and other end uses.

An addition to **Superior Yarn Mills,** Mount Holly, N. C., is being constructed to house machinery which will be moved from the Long Island, N. C., unit of the firm. Closing of the latter plant is necessitated by the construction of a hydro-electric power dam which will flood the site. Management anticipates the move will be completed prior to the October 3 closing date. The new dam is expected to affect the company's plant at East Monbo, N. C., also, although operation will be continued through 1960.

Application for a charter of incorporation has been filed by **Susan Carol Hosiery Mills and Distributors,** Gibsonville, N. C. Incorporators are Garland E. Bennett, B. F. Wood, and Howard W. Curl.

The Dwight plant of **Cone Mills Corp.,** located in Alabama City, Ala., will be closed as soon as "current orders have been filled and the stock in process has been run off, or at such earlier time as may be fixed by the executive committee or directors," according to an announcement from Cone officials. * * * Employees of Eno plant, Hillsboro, N. C., were recently invited to visit the test room in the carding department and

● FIFE Automatic Cloth Guiding Equipment insures the cloth selvage engaging tenter pins or clips accurately, evenly . . . and smooth accurate positioning of tenter rails automatically, hydraulically.

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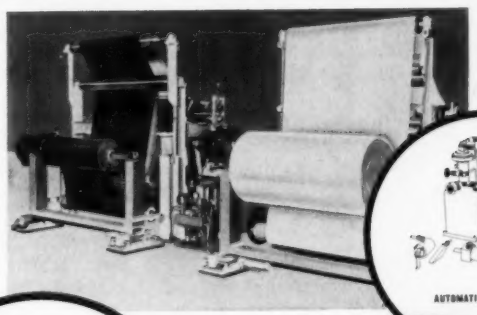
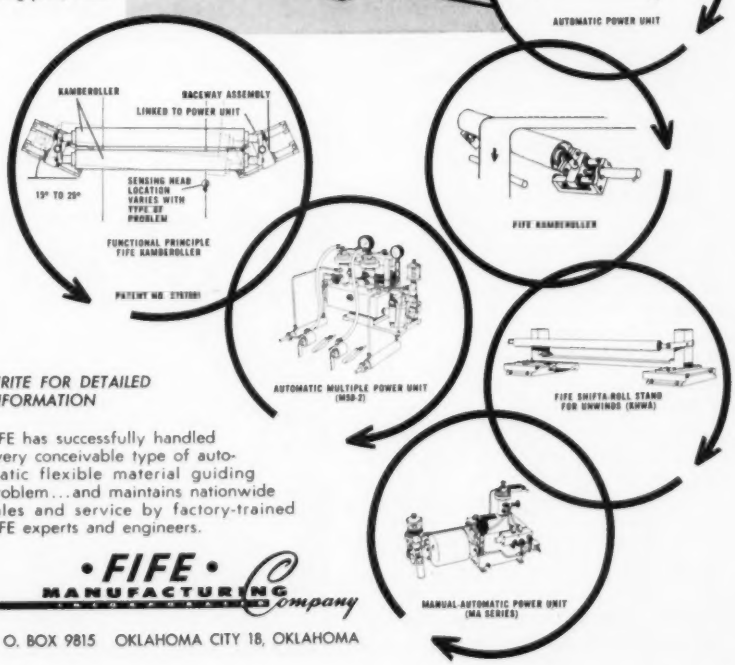
Two FIFE SHIFTA-ROLL STANDS and Model M75-2 Power Unit effect automatic guiding by laterally shifting the let-off rolls of two adjacent machines at Holliston Mills, Kingsport, Tenn.





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MILL NOTES

(from page 209)

inspect the newly-installed quality control equipment.

The **Costa Mesa (Calif.) Knitting Mills** have been established at 929 Baker St. The organization includes a manufacturing plant to make knitted tubular fabrics and two affiliated companies, Costa Mesa Finishing Co., Inc., and Costa Mesa Fabrics, Inc. According to Myron Herschler, one of the founders of the firm, this is the first cotton knit and finishing plant to be set up on the West Coast, as far as he has been able to determine.

Avondale Mills recently held its 37th annual inspection and open house. During the three days, visitors were taken on conducted tours through the company's mills at Sylacauga, Sycamore, LaFayette, Alexander City, Pell City, and Birmingham, Ala. Management made known that the carpet yarn plant at Stevenson, Ala., has ordered for delivery this month an exceptionally large number of large package sliver-to-yarn worsted type spinning frames.

Kerr Bleaching & Finishing Works, Inc., Concord, N. C., has contracted for a warehouse to be used for shipping and storage space. An August completion date is scheduled.

As another step in a continuing modernization and improvement program, **La France (S. C.) Industries, Inc.**, have installed an automatic dryer in the finishing department. More than 100 ft long, the gas-fired dryer handles cloth from wet to dry in one uninterrupted operation.

Lee Hosiery Mills, Inc., Landrum, S. C., has ceased operations. Closing of the full-fashioned hosiery plant was attributed to the increasing popularity of ladies' seamless stockings.

A new 180-ft finishing range has been installed at **Lynrus Finishing Co., Inc.**, Poughkeepsie, N. Y. Company officials noted that the range has increased production by 60% and enabled the firm to strengthen the quality control program to meet Government and civilian specifications in the production of the company's flame retardant finish.

The recently-formed **Linen Thread Jute Mills, Inc.**, has acquired the business of the Marshall Mill in Kearny, N. J., formerly operated by **The Linen Thread Co.** Linen Thread Jute Mills, headed by Edward E. Wild as president, will continue the manufacture of jute carpet backing yarn, electrical yarn, and twine.

The **Long Shoals (N. C.) Cotton Mills** was completely destroyed by fire recently.

Y & B Realty Corp. has purchased **Manor Hosiery Mills, Inc.**, Reading, Pa., manufacturers of women's seamless stockings. The Y & B firm, which operates two other hosiery mills in Pennsylvania, has indicated that a new name for the operating firm is under consideration.

An expansion program is currently under way at the Bridgeton, N. J., plant of **Mar-Clay Hosiery Mills, Inc.** When the program is completed in the early fall, the firm will have added about 250 new seamless knitting machines. It is estimated that production of ladies' seamless hosiery will be upped to about 6,000 dozens per week. Finishing operations will be conducted at the new location of the firm's Philadelphia, Pa., offices.

In line with a modernization program instituted in 1958, **Slane Hosiery Mills, Inc.**, High Point, N. C., has begun work on a "major addition" to its plant.

Imperial Yarn Mills, Belmont, N. C., has been purchased by undisclosed interests. The sale includes 67 houses around the mill. A spokesman for the buyers stated that plans for extensive improvements, both at the mill and in the surrounding village, have been made.

The Rocky Mount, N. C., Lions Club has presented **Dacy, Inc.**, with a plaque designed to express appreciation for the contributions the firm has made to the community. The firm dehairs vicuna, cashmere, camel, and other hides to provide rare animal fiber for textile mills, and it is said to be the only operation of its type in the South. Vice-president Harry L. Young, Sr., accepted the plaque on behalf of the company.

Production and administrative facilities of **The Linen Thread Co., Inc.**, are being centralized at Blue Mountain, Ala., as part of a program to bring new vigor and wider scope to its operations, James E. Robison, president of Indian Head Mills Co., Inc., the parent company, announced. Merchandising and sales service departments have been established to assume responsibilities of the company's branch sales offices and work in close liaison with the production department in meeting customer requirements.

The premises occupied jointly by **Garland Knitting Mills** and **Bernat Yarns Co.** in Boston, Mass., are being realigned in a modernization program designed to make the two organizations one of the most modern and complete dyeing and knitting operations in the area, according to a recent announcement.

CALLAWAY MILLS CO., LaGrange, Ga., recently presented LaGrange High School football coaches, the players, the cheerleaders, and school officials with scoreboard towels marking their achievement in winning the 1958 AAA State Championship. Here the coaches and co-captains are shown receiving one of the towels from H. T. Mahaffey (second from right), superintendent, and J. T. Braswell, Jr. (right), manager of the Elm City plant where the towels were designed and made.

SUPPLIER NOTES

O. E. Herzog has become manager of the marketing technical department of **American Enka Corp.,** a new post. Mr. Herzog will be located in the New York City offices. As a part of the organizational set-up, Leslie L. Cobb has been appointed rayon staple sales development manager at the Enka, N. C., main plant. * * * M. Boylan Carr has been designated market manager for textile rayon and nylon yarns and fibers,

Mr. Thayer

Mr. Carr

Mr. Pomeroy

Mr. Van Laer

and T. Redmond Thayer holds a like position in the rayon staple and industrial products department. Both departments were created recently. Succeeding Mr. Carr as textile rayon sales manager is William M. Pomeroy, Jr.; while J. A. Van Laer takes over as industrial yarn sales manager in the post vacated by Mr. Thayer.

The Textile Institute, Manchester, England, has awarded a fellowship to Sidney M. Edelstein, president and technical director of **Dexter Chemical Corp.,** New York City.

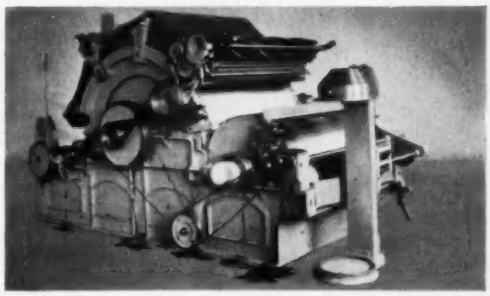
The general offices of **Aberfoyle Manufacturing Co.** have been moved to Gastonia, N. C. While executive offices will be maintained in New York City, Philadelphia, Pa., and Gastonia, it is anticipated that executive offices will be relocated in Gastonia at a future date.

Arnold C. Corwin has been appointed to the fiber end-use development staff of **Allied Chemical Corp.,** National Aniline Division. Mr. Corwin will serve as a textile technologist specializing in the application of Caprolan to home furnishings and apparel fabrics. * * * Allied Chemical Corp. has acquired the business and assets of **Harmon Colors,** producers of organic pigments for textile, rubber and plastics, etc. Harmon Colors was previously a part of B. F. Goodrich Chemical Co.

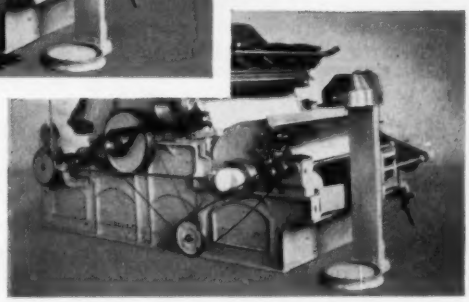
Talcott M. Banks has been elected a vice-president of the **H. F. Livermore Corp.** He continues as a member of the board of directors.

F. M. Grauer, vice-president of **Continental-Diamond Fibre Corp.,** has assumed complete responsibility for the company's product pricing,

NON-FLUID OIL
TRADE MARK REGISTERED



Ordinary Oil throws and spatters



NON-FLUID OIL stays where applied

When bearing wear throws Doffer and Top Flats out of alignment, uneven sliver results. Ordinary oil and thin grease cannot prevent bearing wear because they do not stay in bearings, but drip and spatter out.

NON-FLUID OIL adheres to bearing surfaces — lubricates and protects them *until it is completely consumed.* In comb boxes, NON-FLUID OIL prevents heating and minimizes wear.

It outlasts even the best grade of ordinary oil 4 to 6 times. In addition, NON-FLUID OIL is dripless; it will not throw or spatter on card clothing and cotton—which means less waste, as well as savings in application time and lubricant.

Seven out of ten mills now use NON-FLUID OIL in their card rooms. Write for Bulletin T-5 and free testing sample.

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This ball-bearing loggerhead is designed to relieve excessive strain thrown against the head by unlocking it, thus preventing a breakdown.

It will increase picker room production. It will eliminate shut-downs. It will prevent stretched laps because of its ball-bearing, friction-free rollers.

Immediate delivery — guaranteed satisfaction!

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ANDERSON SHIELDS

will reduce . . .
CHIPPING — SPLITTING
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of your . . .
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We Will Cooperate
— To Save You Money.

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LAWRENCE, MASS., U.S.A.
SERVING NEW ENGLAND SINCE 1917

SUPPLIER NOTES

(from page 211)

advertising, and public relations, as well as representing the firm in external relations. A. J. Briggs, general sales manager, has supervision of the firm's sales and marketing activities. W. T. Shugg has been assigned responsibility for sales office administration in addition to his duties as manager of marketing services.

Edward W. Blackwood and G. P. "Jack" Stanley have been added to the staff of **Roberts Co.** as sales engineers. Mr. Blackwood's territory will

Mr. Blackwood

Mr. Stanley

be the central and western North Carolina areas and Mr. Stanley's will include western South Carolina.

Walter Lill has been promoted to the position of sales coordinator of the Fleissner Dryer section of the textile machinery division of **Saco-Lowell Shops.** The dryers, previously made in Germany, will now be manufactured at the Saco-Lowell Gear and Machine division plant at Sanford, N. C., under a licensing agreement between Saco-Lowell and Fleissner & Sohn.

Union Bag-Camp Paper Corp. has purchased the majority of the stock of **The Eastern Box Co.,** according to a joint announcement from the two firms. George W. Wagner continues as president of Eastern, which will be operated under its present name as a subsidiary of the parent organization.

William G. Howells has been elected to the position of secretary and a director of **Merrow Machine Co.** At the same board meeting, John M. Washburn, Jr., was elected assistant treasurer.

Mr. Howells
Merrow Machine

Mr. Clarke
Minn. Honeywell

Robert D. Clarke has become market manager for the textile and paper industries of Brown Instruments division of **Minneapolis-Honeywell Regulator Co.**

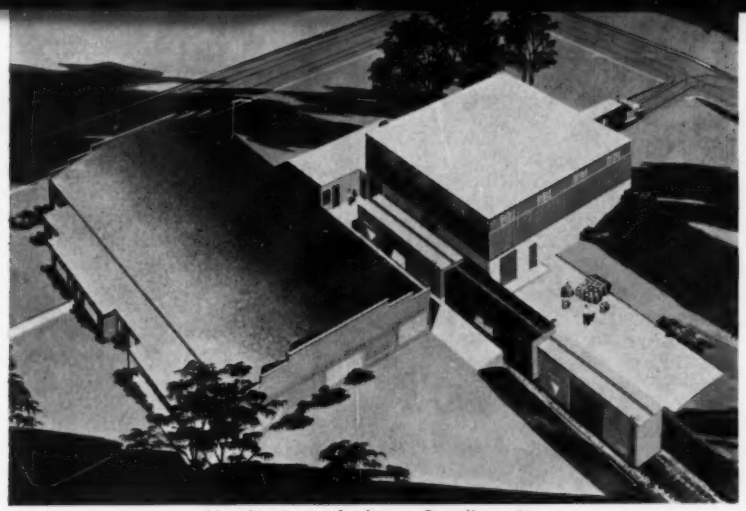
Davis E. Williams, Jr., has been named district manager of the **National Vulcanized Fibre Co.** office in Charlotte, N. C.

Nopco Chemical Co. has contracted to acquire for cash all the issued and outstanding capital stock of **Jacques Wolf & Co.** Present plans are to operate the newly-acquired firm as a wholly owned subsidiary.

Construction has begun on a half-million dollar plant expansion of the Springdale, Conn., holdings of **Polymer Industries, Inc.** Scheduled for completion in late fall, the additions will double the firm's research and development facilities.

PHI PSI OFFICERS. Grand council officers of Phi Psi national textile fraternity, elected during the organization's recent annual convention in Atlanta, Ga., are (left to right): treasurer, Mortimer Farley of Weston, Mass.; president, Ben Bellemore of Reading, Pa.; secretary, W. C. Whitten of Clemson (S. C.) College School of Textiles; and vice-president, G. L. Logan of Veeder-Root, Inc.

STAFF PHOTO



Houghton's new facility at Carrollton, Ga.

A firm of manufacturers representatives, **Spooner-Krueger & Associates,** has been formed in Charlotte, N. C. Products of several foundries are sold. Also included in the organization's line are adhesives, chalk and crayons, machinery mounting pads, etc., of **Lowell Industries, Inc.,** a subsidiary of H. F. Livermore Corp.

Fred Harvell has joined **Schmidt Manufacturing Co. of S. C.** in the position of technical sales representative. Mr. Harvell makes his home in Atlanta, Ga., and is calling on mills in the states of Georgia and Alabama.

Scott & Williams, Inc., has announced that **The Torrington Co.** is now distributing flat parts for S & W hosiery machines. Mills in the U. S. and Canada may order from Torrington branch offices, as well as through Scott & Williams branch offices or factory.

Smith Products, Inc., has been incorporated to succeed the former **Smith and Hunt Machine Works** in Athens, Ga. The company manufactures knitting machine parts. According to Roy M. Smith, Jr., president, the firm holds an exclusive license for manufacturing parts and rebuilding machines to include the "Fabritrol" attachment. John W. Sweeney, formerly executive vice-president of The Narrow Fabric Co., is vice-president of the firm. Robert W. Hunt, Sr., is plant foreman.

E. F. Houghton & Co. has formally opened its new warehouse and office in Carrollton, Ga. Upon installation of manufacturing equipment in a plant adjoining the warehouse and office, the Houghton line of products will be produced locally. The new integrated sales, warehousing, and manufacturing facilities represent the latest step in the firm's continuing expansion program.

Jesse I. Long has been promoted to the position of shuttle specialty salesman for the southern division, **Steel Heddle Manufacturing Co.** His territory includes North and South Carolina and Georgia. Don Tate has been made reed specialty salesman for the southern division, and Willard A. Goodwin has been transferred from the New England territory to the southern division sales force, assigned to South Carolina.

Eugene R. Shaw has joined **Stein, Hall & Co., Inc.,** as a burlap sales specialist in the Atlanta, Ga., sales office. While his primary concern is to call on the manufacturers of tufted carpets in Georgia and Ten-

Mr. Harvell
Schmidt Mfg.

Mr. Long
Steel Heddle

Mr. Goodwin
Steel Heddle

Mr. Tate
Steel Heddle

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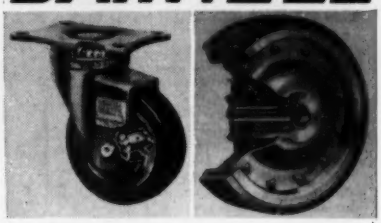

these EXTRA-VALUE FEATURES mean top performance and economy

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

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STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

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- One size fits 8 x 4 thru 12 x 7 bobbins

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Whitehead bobbin holders can be specified for your creels thru all the best creel mfgs. Also available direct for thread boards

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WEST BEND EQUIPMENT CORP.
MATERIALS HANDLING ENGINEERS
362 Water Street • West Bend, Wisconsin

SUPPLIER NOTES

(from page 213)

nessee, he will also sell the full line of Stein Hall's burlap products in that area.

Paul Keb has become North and South Carolina district manager for **Dodge Manufacturing Corp.,** succeeding George Woolley who has retired. Mr. Keb is assisted by Jack Stroobandt as sales representative in the same territory. Charles Curtis has

Mr. Keb

Mr. Stroobandt

been assigned to the New York City district office, where he will handle sales in parts of Connecticut, Massachusetts, and New York. * * * Dodge has acquired an interest in the new **Fenner Dodge (Australia) Pty. Ltd.,** a company organized to manufacture V-belts and mechanical power transmission products in Australia.

Robert P. Morningstar has established the **Morningstar Research Center, Inc.,** at Milford, Pa. The firm will provide consultant services in textile sizings and related chemical fields.

Morrison Machine Co. is reported to have launched plans to establish a new plant for the manufacture of textile wet processing machinery at Fort Lawn, S. C.

The corporate name of **National Starch Products, Inc.,** has been changed to **National Starch and Chemical Corp.** The change was made to reflect the increasing importance of chemical products and processes in the firm's business. It was emphasized that there will be "no lessening of the company's activities as a leading producer of starch products, adhesives, and specialties."

Edward S. Pierce has resigned his position at **H. W. Butterworth & Sons Co.** division of Van Norman Industries, Inc. He was vice-president in charge of sales, engineering, research and development, and advertising.

Howard F. Elsom has been named group leader for textile product development, **Celanese Corp. of America.** He will be located at fibers division headquarters in Charlotte, N. C. * * * Celanese Corp. has announced that all deniers of its bulked acetate filament yarns will be marketed under the trademark "Celaloft."

Colton Chemical Co. has opened a new sales office, warehouse, and bulk storage depot in Tampa, Fla., headed by S. E. "Prof" Werner.

The southern sales headquarters for **Cotton-McCauley & Co., Inc.,** are now located at 3813 S. Boulevard, Charlotte, N. C. The division is headed by Ray McCauley, vice-president, assisted by J. B. Howarth, sales agent. The southern service division remains in Greenville, S. C.

Harold W. Ball has joined **Curtis & Marble Machine Co.** in the new position of product engineer. His duties include coordinating improvements and modernization of existing machinery, as well as analyzing new product developments for diversification.

Charles C. Cayce has been named to the new post of southern regional manager of **General Dyestuff Co.,** a sales division of General Aniline & Film Corp. W. B. Huntley succeeds

Mr. Cayce

Mr. Bonnar

Mr. Cayce as branch manager in Charlotte, N. C. * * * J. Robert Bonnar has been designated director of marketing, Dyestuffs & Chemical Division. He headquarters in the New York City offices.

George McDougall has assumed his new duties as chief engineer, Greenville, S. C., division of **Daniel Construction Co.**

The Stanley Steel Strapping division of **The Stanley Works** has added Deane A. Anderson to its sales force. Headquartering in the Philadelphia, Pa., sales office, Mr. Anderson will have as his territory the states of

(Continued on page 217)

FREE MAIL ANALYSIS

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Heat Reclaimers

RECOVER 25-50% WASTE HEAT

A simple economy takes place with P-K Textile Heat Reclaimers. Waste hot water pre-heats incoming cold water. This recovers 25-50% waste heat. It reduces fuel costs. It increases boiler capacity. Savings run $8,000 a year and more. Installations pay for themselves completely in as little as nine months!

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20

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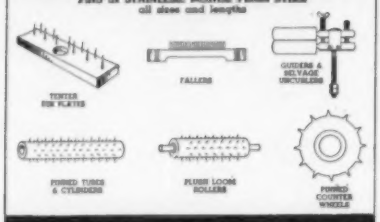
all sizes and lengths



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OVERSEER WANTED

OVERSEER OF COTTON CARDING WANTED. WELL ESTABLISHED TEXTILE MILL, MIDDLE ATLANTIC STATES, WANTS MAN WITH TECHNICAL AND PRACTICAL COTTON CARDING EXPERIENCE FOR COARSE WORK. PLEASE SUBMIT WORK RESUME AND SALARY EXPECT. WRITE BOX 62, TEXTILE INDUSTRIES, 806 PEACHTREE ST., N.E., ATLANTA 8, GA.

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Cleveland 15, Ohio
Attn: K. L. Lindhurst

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1—Butterworth Padder 66" wide complete with motor.

1—Hennikin Pin Frame, 220" wide, 70' long, heavy duty, enclosed gears. 550 volt, 3ph. 10h. with folding & rollup.

Send all inquiries to BOX 58, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta, Ga.

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SUPPLIER NOTES

(from page 214)

Pennsylvania, Delaware, and New Jersey.

Two new sales representatives have been added by **Belmont Throwing Corp.** Representing the firm in the midwest is Donald G. Brewster, 3317 N. Rutherford Ave., Chicago, Ill. John Dunn, 100 E. Broad St., Palmyra, N. J., will serve customers in Pennsylvania.

John R. Wall has joined **Ridge Tool Co.** as a special factory trained sales representative in charge of one of the firm's "Mobile Demonstration Wagons." Mr. Wall is covering Georgia, South Carolina, Alabama, Mississippi, Tennessee, and Florida.

Mr. Wall
Ridge Tool

Mr. Leveritt
Manton-Gaulin

C. Howard Leveritt has been named direct factory sales and service representative of the industrial division of **Manton-Gaulin Manufacturing Co., Inc.** He will headquarter in Decatur, Ga., and will serve the southern states.

Regent Machinery Corp. has been established in New York City for the importing of European textile finishing machinery to the United States, Canada, and Mexico, and the exporting of textile machinery to Europe and South America. Leonard H. Platnick, formerly chief engineer of the textile division of **Cosa Corp.**, is the firm's president.

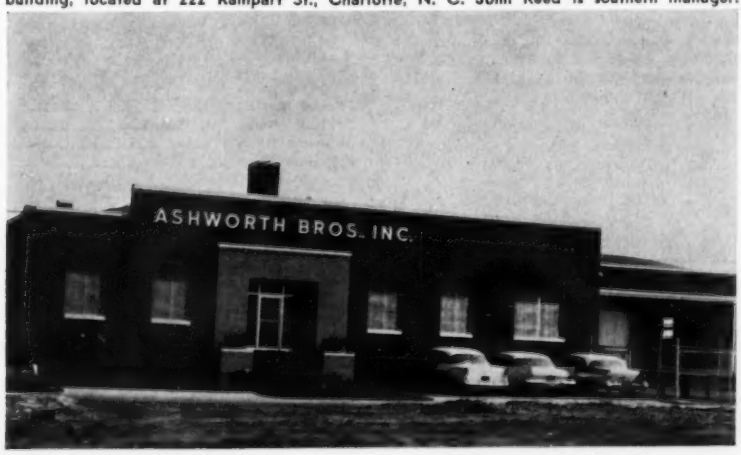
HONORED. Cameron A. Baker, United States Testing Co., Inc., Hoboken, N. J., and Sumner H. Williams of General Aniline and Film Corp., New York, N. Y. were made honorary members of Phi Psi fraternity at the annual meeting of the group in Atlanta, Ga. The degrees were administered by George Long of Wallace and Tiernan, Belleville, N. J., retiring president of Phi Psi.

In a national competition conducted by Exide Industrial division of **The Electric Storage Battery Co.**, J. A. Cronk, Atlanta, Ga., branch sales manager, was awarded a bronze plaque in recognition of his outstanding sales, service, and management achievements during 1958.

Robinson F. Edgar has accepted a position as marketing manager of the industrial hose division at **Flexonics Corp.** He is located at the division headquarters in Rock Falls, Ill.

James O. Hodges has been appointed a member of the southern sales staff of **American Paper Tube Co.** Mr. Hodges will make his headquarters in Charlotte, N. C.

The southern offices of ASHWORTH BROTHERS, INC., have been moved into this new building, located at 222 Rampart St., Charlotte, N. C. John Reed is southern manager.



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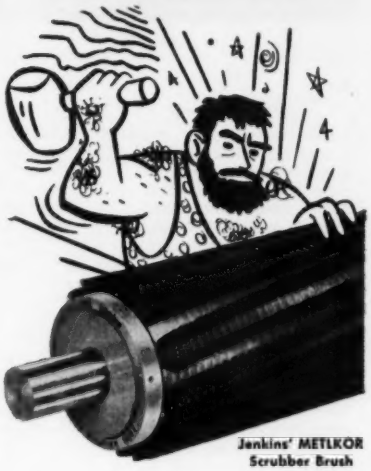
Toughest Test

For Brushes?



Jenkins' METLKOR Scrubber Brush

The DAREX Model ND Blanket Washer Unit

When Dewey and Almy Chemical Company developed their high-speed blanket printing process "DAREX VERSA-PRINT" a difficult problem arose. Colors picked up by the "DAREX" embossed blanket had to be removed with each turn around . . . colors that contained gums, resins, rubbers, etc. They had to be removed by solvents, detergents and high pressure water sprays at washing and drying speeds of 180 yards a minute. A special automatic machine, the "DAREX" washer was developed, in which seven specially designed Jenkins' METLKOR brushes are used.

CRUCIAL TEST FOR JENKINS' BRUSHES

"It is difficult to imagine conditions more severe than for the first three scrubbing brushes in this machine," states Mr. H. H. Bailey, Sales Manager of Printing Products Division of Dewey and Almy Chemical Co., Div. of W. R. Grace and Co. "Temperatures range from 40° to 212°F. Vapors range from saturated steam to mixtures including high percentages of mineral and organic solvents, caustics and acids. At speeds up to 1300 rpm the brushes must not vibrate. Jenkins' brushes are more than equal to these requirements and provide long and satisfactory life."

Specify Jenkins' METLKOR . . .
the original . . . the best Metal-Core Brush

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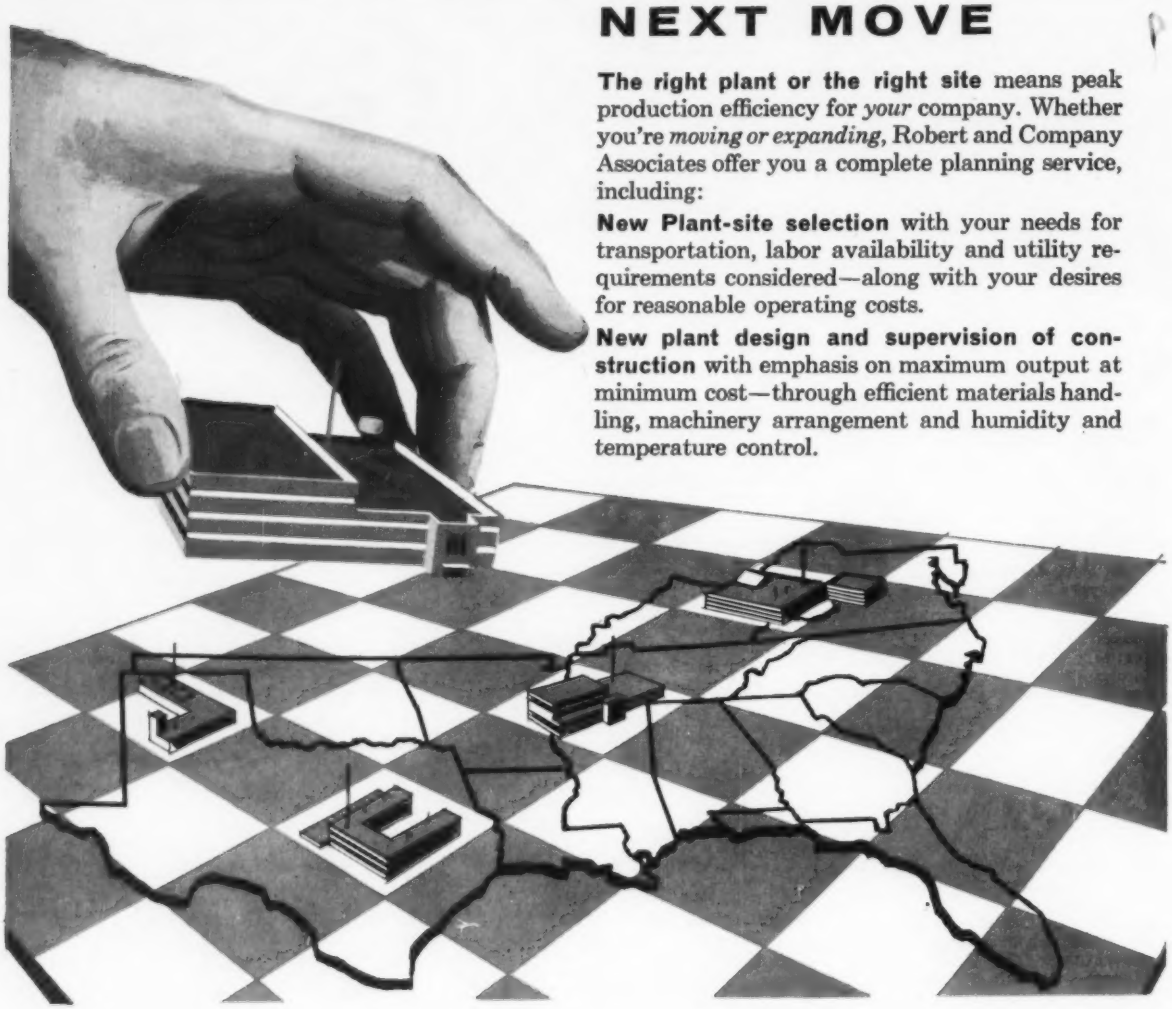
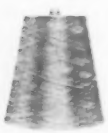
NEXT MOVE



The right plant or the right site means peak production efficiency for *your* company. Whether you're *moving or expanding*, Robert and Company Associates offer you a complete planning service, including:

New Plant-site selection with your needs for transportation, labor availability and utility requirements considered—along with your desires for reasonable operating costs.

New plant design and supervision of construction with emphasis on maximum output at minimum cost—through efficient materials handling, machinery arrangement and humidity and temperature control.



For over 42 years Robert and Company Associates have helped plan the growth patterns of many textile giants, particularly in the industrial South. Let them put this experience to work in planning for *your* company's growth.

Other services of Robert and Company Associates include

Modernization & Materials handling studies Machinery layouts • Water treatment • Waste disposal • Appraisals • Building design Air conditioning • Power plants • Storage and warehousing • Consultation

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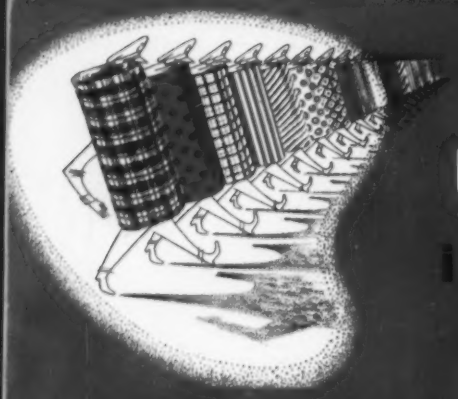

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